

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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## Flight.

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Honour and Welcome  
to the  
Royal House of Windsor.  
God Save the King.

## EDITORIAL COMMENT.

**A**FTER but four hours' discussion, the United States House of Representatives has passed unanimously a vote for £128,000,000 for the construction of aircraft to be sent to the European theatres of war. The House voted the money—the largest sum by far that has ever been allocated for aircraft purposes—without asking for any details of the plans of the War Department, and without any knowledge of the number of aeroplanes and airmen to be sent to Europe. All that remains now, apparently, is for the Senate to deal with the vote in the same spirit of patriotic compliance. In the meantime, preparations for the construction of aeroplanes

America's  
Effort  
in the Air.

and the training of airmen are proceeding as if the Bill had been finally enacted, as it most certainly will be.

We leave it to the enemy to figure out for himself how many machines can be constructed and how many airmen can be trained and put into the field before this huge credit is exhausted. He can also draw what comfort he can from the knowledge that, large as the initial sum is, there is much more behind it, and America, with her grim determination to see the war through to its only possible conclusion, will not hesitate to appropriate still further sums of money as and when it becomes necessary to do so. Not only do we realise the American spirit of determination to victory through this vote of money for aircraft construction, but in the utterances of public men and the Press we see a rapidly growing conviction that the main effort is to be in the air. The Americans are convinced that the war can and shall be won by the use of aircraft in huge numbers. It is to be carried by air into Germany, so that the enemy people may be brought to realise what war is and what it is their own armies have taken into Belgium, France and the rest of the countries of Europe which have suffered from Prussian megalomania. It is apparent that neither the talk of the pacifists or the plaintive platitudes of people like the Archbishop of Canterbury will be allowed to turn the United States from the main intent to defeat and destroy, once and for all, that insane militarism which has plunged the whole world into a welter of bloodshed. We hear nothing of coming out of the war with "clean hands." All the talk in America is of defeating the enemy by all and every means to hand. Germany has not hesitated to use means and methods which were, we had fondly hoped, outside the usages of civilised war. We know better now, and while we have been compelled to copy those methods in certain directions, there are others we have been too squeamish to adopt. Among these is the use of aircraft in their ultimate rôle of the bombardment of German towns. We know, in our inmost hearts, that it will have to come to that sooner or later, but the feeling is that it should be later rather than sooner. It is perfectly obvious that in America the stern alternative is accepted that it will have to be sooner, and in that we entirely agree. The war has got to be won, and the earlier we can achieve complete victory the greater will be the saving of life and treasure. Therefore, if to be ruthless now is the truest way to be kind in the end, then in

Heaven's name let us be ruthless. That seems to be the American view, and for that we are unfeignedly glad.

The American feeling is very well expressed in a long article in *Aircraft* from the pen of Alfred W. Lawson, who points out that this is a war between Democracy and Autocracy:—

"Democracy must, therefore, train and fight now while she has the opportunity as she never trained or fought before.

"To fight the enemy is not a matter of destroying men, but a matter of destroying a man-made machine for enslaving mankind. The death of a few million men means nothing if the machine is destroyed.

"The Kaiser is as much of a slave of the Autocratic system for which he fights as the dupes whom he enslaves. He craves power as the whiskey soak craves liquor, or the drug fiend craves injurious drugs.

"Democracy must not expect, however, that if it teaches its disciples to be peaceful, like the lamb, while Autocracy teaches his disciples to fight like the lion, that a test of strength will prove to her advantage.

"Now the Kaiser is a progressive (in everything except democratic principles), and especially is he progressive in adopting new and effective war methods.

"The Kaiser's latest methods in warfare is to strike his enemies from behind their lines, to strike at the source of supplies that must go to his enemies' armies to enable them to fight—as evidenced by the work of his submarines, Zeppelins and Pacifists.

"Striking behind the lines is the most modern and effective method of warfare, and Democracy must fight with modern weapons.

"The most modern of all weapons in warfare is Aircraft, and this weapon must be used to its fullest extent if Democracy expects to win this war.

"Aircraft must be sent behind the German lines to stop supplies being sent to the Kaiser's armies in the trenches.

"Aircraft must be sent behind the German lines, not in twos and threes or in tens or in hundred lots, but aircraft must be sent there by the thousands at a time, aye, by the tens of thousands or even by the hundreds of thousands if need be. They must literally swarm about the Kaiser like stinging bees around the head of a honey thief.

"These aircraft must be so overwhelming in number and efficiency that the Kaiser's opposing craft will be swamped by the tide, leaving a clear air for democratic machines to operate in. For, if Democracy only equals Autocracy's air forces, then the effectiveness of aircraft is neutralised, and no advantage has been gained. So the slogan must be ten democratic aircraft for every one autocratic aircraft. At that ratio the war would come to an end very quickly.

"So the hour has come to strike, Democracy, and to strike with all of your might. You must strike Autocracy dead, for if he lives he will, sooner or later, be the cause of your death. You strike death to your opponent that you may live and have liberty. Strike his lines and strike behind his lines, and whatever you do, don't fail to strike his venomous Pacifist nesting within your own lines."

The language employed may be a little more flamboyant than we are accustomed to use here, but the underlying sentiments are absolutely sound

and to the point. They express to the full our own feelings.

## The Increase of Aircraft Production.

On another page of this issue of "FLIGHT" we print a speech delivered by Dr. Addison, the Minister of Munitions, in which he sets forth at length the enormous progress that has been made in the production of aircraft during the past twelve months. It is a remarkable statement and one that should be read and pondered by everyone, whether interested in the development of aviation or not, since it is a striking object lesson in the tremendous efforts that have been put forth by this country in the prosecution of the war. We do not intend to quote here from the speech, but there are one or two points which seem to us to possess the deepest significance. Dr. Addison said that for our present output of aeroplanes we require more spruce than the entire annual output of the United States, more mahogany than Honduras can supply, the whole of our own capacity for alloy steels. As for flax to produce the necessary fabric, the Government has actually to supply the seed essential to growing it. These in themselves are facts which assist us to realise what a stupendous affair this war of the world is, but they go much deeper even than that. They assist very materially in helping us to the absolute conviction that the defeat of Germany is as inevitable as to-morrow's sunrise, if only we retain the determination to go on until we have accomplished that which we have set out to do. We are able to see that, with the produce markets of the world closed to her, Germany has not at hand the material resources to enable her to keep pace with the Allied means of war. Every day that passes sees the Allies growing stronger and the enemy relatively weaker. That was so before the entry into the war of the United States, but with the whole of the resources of the latter behind the Entente that position is accentuated almost beyond the possibility of appreciation.

## Air Raid Grants.

From the time of the very first German air raids on this country, "FLIGHT" has taken the lead in urging, on the Government the necessity for making damage to life and property a national liability. Failing the ability of the State to assume such an open liability, we advocated that it should be made a national asset in the shape of an insurance scheme in which the State should take over the liability for loss in return for the payment of an adequate premium. Of the two schemes, we have always favoured the former, for reasons that we have, on more than one occasion, set forth at length. So far as the liability for material damage is concerned, the Government ultimately adopted the second alternative, and has entered into business relations with the people under its air risk insurance scheme. But this scheme has hitherto taken no account of risk to life and limb. Now, however, a new scheme is to be put into operation for the alleviation of distress caused by the loss of life or property, the particulars of which will be found on another page.

In view of the Government scheme of insurance, assistance under the new arrangement will not ordinarily be given in the case of damage to property. Cases, however, are bound to arise where distress





*Reproduced by special permission of the Italian Government.*  
FROM "THE WAR IN ITALY."—In the mountains : Austrian trenches in the snow.

has been caused among the poorer people through the destruction of their furniture, and it is this class of case in which the property compensation part of the scheme will come into operation. In such cases assistance may be given, limited to the replacement of furniture or utensils essential to the daily life of the home, but it is to be limited to a maximum payment of £20. Except for this very useful provision, the scheme is strictly limited to relief in cases of loss of life or personal injury.

We welcome the scheme, which, if it is not drafted on a particularly generous scale and is somewhat limited in its scope, at least establishes the cardinal principle of national liability for air-raid damage.

## Winter Comforts for the Troops.

The Director-General of Voluntary Organisations, Sir Edward Ward, has issued an appeal for winter comforts for the troops. As he points out, whatever may happen in the way of peace movements in the meantime, it will obviously be necessary that a very large number of troops shall be kept in the field all through the coming winter. Therefore, even supposing there should be a cessation of active hostilities to-morrow—of which there is not the remotest possibility—the necessity would still exist for a huge mass of voluntary effort for the supply of our men in the field with "comforts." We therefore commend to the good offices of our readers the object of Sir Edward Ward's organisation. In his appeal he writes: "I feel sure that all workers who have the welfare of the soldiers at heart will appreciate the great importance of 'pooling' all gifts. The machinery for distribution through the medium of the 'comforts pool' at the various battle fronts has been gradually perfected, with the result that officers have only to make their wants known to the special officer in charge of the

'comforts pool' in any theatre of war where they are quartered to ensure the immediate delivery of the comforts required for their men." Where our readers are more directly interested in the Flying Services, we would remind them that the very excellent organisation, ably administered by Lady Henderson and Mrs. Murray Sueter for the provision of comforts for men of the R.N.A.S. and R.F.C., is still in existence and as deserving of help as ever.

## London's First Air Raid Warning.

On Saturday evening last London had its first experience of being warned of a threatened air raid. As a matter of fact, no raid eventuated, and the warning therefore resolved itself into a species of dress rehearsal of the real thing. On the whole, the arrangements seem to have worked rather well. Policemen on foot and on bicycles were sent through the streets bearing placards warning people to get under cover, and although it appears that only a very small percentage of people actually saw the warning notices, the news that a raid was expected spread with the speed of electricity. It is satisfactory to know that there was no semblance of panic, even in the districts that have suffered most severely in previous raids. So far as it is possible to learn, practically the population of London affected proceeded quietly and in a perfectly orderly manner to get under the best available cover. The present method of giving warning is, perhaps, crude and somewhat uncertain, but it is only a temporary arrangement, and will, no doubt, be very much improved upon ere long. The principal satisfaction to be derived from Saturday's experience is that it is possible to give effective "short warning" at all, and that the people are able to take the threat of invasion by air with tolerable equanimity.

## GOVERNMENT AIR RAID GRANTS.

A SPECIAL circular is being issued to the local authorities amplifying an unpublished circular of June 16th last, and reaffirming the sympathetic attitude of the Local Government Board towards sufferers from air raids. This has been done owing to the amount of misapprehension which prevails as to the extent of the means available to alleviate distress in the Metropolis from these raids. Local relief committees have been appointed who are charged with the work of making immediate advances from the National Relief and Mansion House Funds. The local committees have been authorised to grant immediate relief up to an amount equivalent to the rates of Army separation allowances. The new scale applicable to air-raid cases is as follows:—

	s.	d.		s.	d.
First adult .. ..	16	0	Second child .. ..	5	0
Second adult .. ..	16	0	Third child .. ..	3	6
Each additional adult	10	0	Each additional child	3	0
First child .. ..	7	0			

**Supplementary Maintenance Allowance.**—It is recognised that there may be exceptional cases where the bread-winner has been killed or rendered physically unfit for work and the family income from all sources, including the maintenance allowance available under the preceding heading, is insufficient to maintain the household in a reasonable degree of comfort. In such cases the Local Representative Committee are authorised to supplement the temporary maintenance allowance by a sum not exceeding 4s. a week in respect of

the first member of the family, 2s. in respect of the second member, and 1s. in respect of each additional member. Should there be any case in which the temporary maintenance allowance and the supplementary allowance are together insufficient, application may be made to the Government Committee by the local committee for authority to grant a special excess allowance.

**Replacement of Essential Articles of Furniture.**—In view of the Government scheme of insurance, assistance should not ordinarily be required in the case of damage to property. Cases may, however, arise where distress has been caused among the poorer people through the destruction of their furniture. In such cases assistance may be given by the local representative committee, but it should be limited to the replacement of furniture or utensils essential to the daily life of the home and the assistance granted for this purpose in any individual case should not exceed £20.

**Funeral Expenses.**—The local representation committee are authorised to defray the funeral expenses of any victims of the raid up to a maximum of £9 in each case.

**Special Grants.**—Application may be made to the Government Committee for authority to make special grants in cases not covered by any of the above headings, as, for example, where special medical or surgical treatment and appliances are needed.

In addition, as already stated in "FLIGHT," applications from the temporarily homeless and other special cases will be sympathetically considered by the Government Committee.

## Prince of Wales's Fund Helps Raid Victims.

In a report up to March 31st upon this fund the Executive Committee state that the total amount issued in respect

of civil distress during the six months was £57,519, and this sum included £1,085 for the relief of air-raid victims. Substantial grants were also made for the relief of sufferers from the explosion in the East of London.

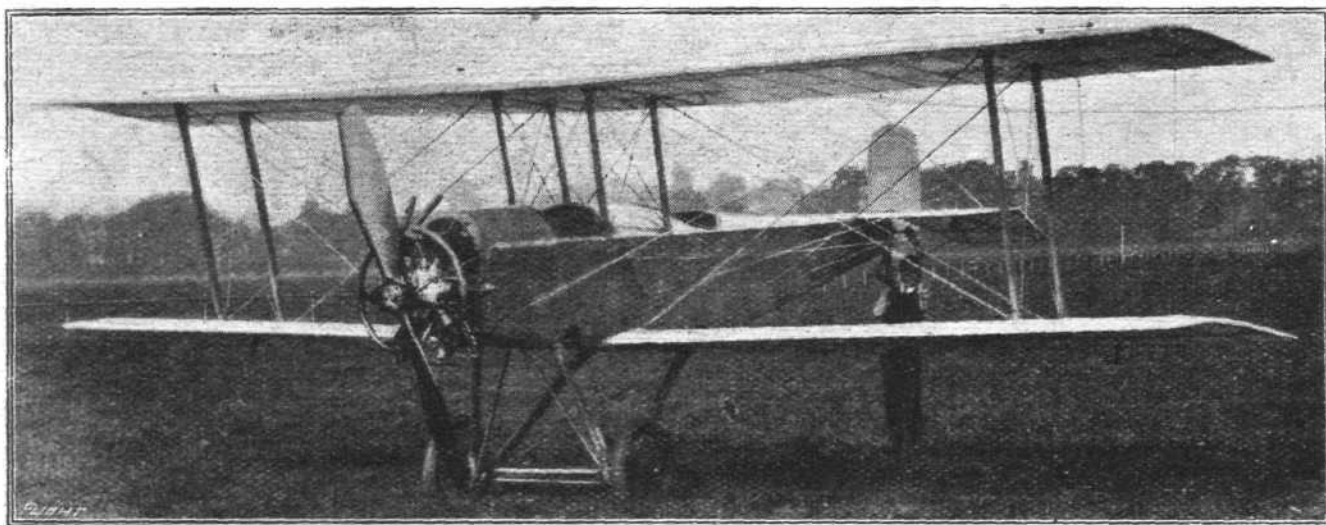


## A NEAT SCHOOL MACHINE.

IN the training of a Service pilot it would often be an advantage if a machine were available on which, after having got to feel quite at home in the ordinary training machine, he could put in a little extra practice before making the admittedly somewhat long step to the high-powered fast Service aeroplane. It was with this object in view that the small biplane illustrated in the accompanying photographs was built. This machine, which was designed for the

steam-bent ash. As will be seen from the illustrations, there is only one pair of inter-plane struts on each side, the machine following in this respect the lines of a fast single-seater scout.

As regards the wing bracing, this is effected by a somewhat unusual combination of steel tubes and stream-line wires. The lift "wires" consist of stream-line steel tube measuring  $\frac{1}{2}$  in. in width by about  $\frac{3}{16}$  in. thick, and of R.A.F. wires. The landing



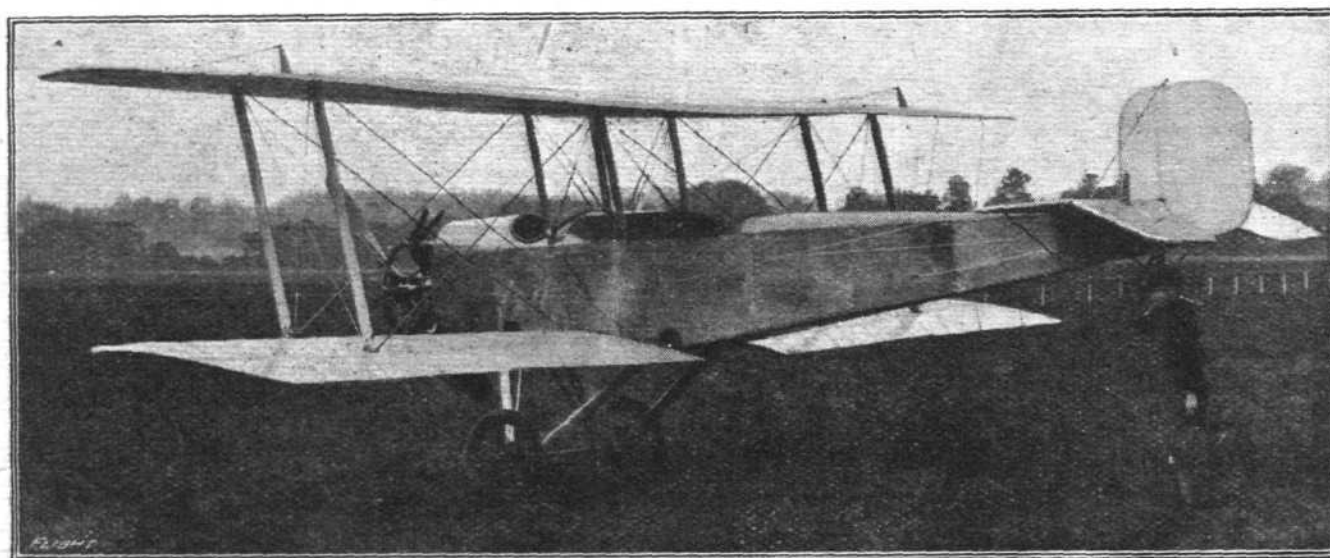
THE W.F. AND E. CO. BIPLANE.—Three-quarter front view.

Wright Forge and Engineering Co., Ltd., of Tipton, Staffs., by Mr. W. Westwood, is a light two-seater, fitted with a 40-45 h.p. Anzani engine. It is stated by the designer to have a speed range of from 30 to 65 m.p.h., and its climb, although not measured, appears to be quite good.

The upper and lower planes are of the same span, and both are fitted with *ailerons* interconnected in the usual manner. The top plane is built up in three

"wires" are steel tubes only. External drift wires run to the nose of the body, and assist the internal wing bracing, which is in the form of stranded cable.

A flat non-lifting tail plane is secured to the top of the body and stayed with stream-line steel tubes. To the trailing edge of the tail plane is hinged the divided elevator, which is operated by means of stranded cables from an external crank lever on the side of the body. The rudder is hinged to the stern



THE W.F. AND E. CO. BIPLANE.—Three-quarter rear view.

sections—a centre section and the two outer main sections. The bottom planes are, as in the majority of modern biplanes, attached to the sides of the body. Structurally the wings are built up of ash spars reinforced with steel, and of ribs having spruce flanges and three-ply webs. The leading and trailing edges are of spruce, except for the tips, which are

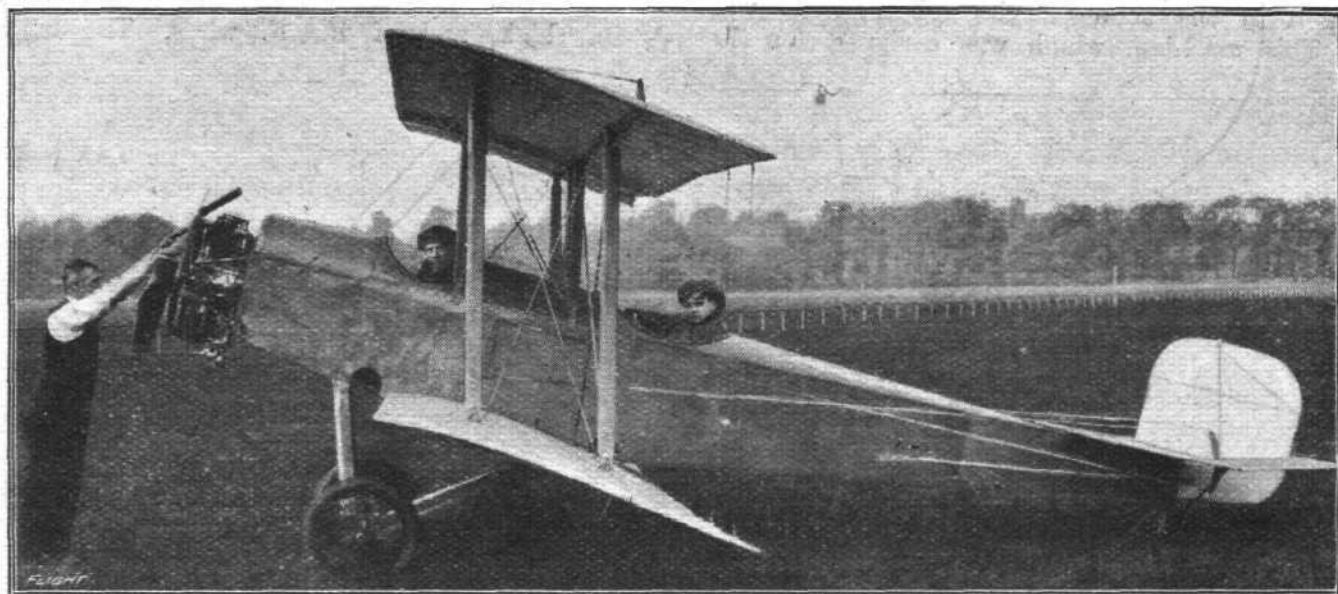
post of the body, and is partly balanced by a forward projection as shown in the illustrations.

Aerodynamically the body is of the ordinary flat-sided rectangular section type, but constructionally it differs somewhat from the majority of other aeroplane bodies. The designer argues—quite rightly, we think—that for a school machine, which is subject

to many and frequently rough landings, it is important that the body should be a strong one. This end is attained in the present machine by an internal construction of the ordinary girder type, with four ash booms and ash and spruce struts in front and rear respectively, the whole being braced with piano wire, supplemented by a covering of three-ply

The instruments comprise: Altimeter, revolutions counter, air speed indicator, switch, throttle and air control.

In the preliminary tests, which were carried out by Mr. René Desoutter at Dunstall Park, Wolverhampton, the machine did not show any tendency to spin, and refused, we are informed, to do a tail-



THE W.F. AND E. CO. BIPLANE.—Side view.

extending the whole length of the body and screwed to rails and struts so as to minimise the danger of short breaks in the rails. A similar body has, we understand, stood up to a nose dive into the ground from a height of about 100 ft. This happened to a monoplane having a similar body.

The pilot's and passenger's seats are arranged tandem fashion, the pilot occupying the rear one.

slide when stalled to a vertical attitude in the air, the machine coming out in a nose-dive from this attitude. The following are the chief characteristics of the machine:—

Length, 22 ft.; span, 26 ft.; chord, 5 ft.; gap, 5 ft.; weight empty, 720 lbs.; area of wings, 245 sq. ft.; area of tail, 15 sq. ft.; area of elevators, 10 sq. ft.; area of rudder, 6.75 sq. ft.; engine, 40-45 Anzani; propeller, Lang; speed, 30 to 65 m.p.h.

## HONOURS.

### French Honours for the R.F.C.

It was announced in a supplement to the *London Gazette*, issued on July 14th, that the following decorations and medals have been presented by the President of the French Republic for distinguished services rendered during the course of the campaign:—

#### *Croix de Chevalier.*

Bt.-Major (Temp. Lt.-Col.) E. R. LUDLOW-HEWITT, M.C., R. Irish Rif. and R.F.C.

Major I. A. E. EDWARDS, R.A. and R.F.C.

Capt. (Temp. Major) C. G. S. GOULD, R.A. and R.F.C.

Capt. (Temp. Major) F. M. ROXBY, N. Staffs., Spec. Res. and R.F.C.

Capt. E. R. L. CORBALLIS, R. Dub. Fus. and R.F.C.

Lieut. (Temp. Capt.) A. MCR. MOFFAT, A. and S. Hrs. and R.F.C.

2nd Lieut. (Temp. Lieut.) R. GREGORY, Conn. Rang., Spec. Res. and R.F.C.

#### *Croix de Guerre.*

Act. Flight Commander C. D. BOOKER, R.N.A.S.

Lieut. F. E. BROWN, R. Dub. Fus., Spec. Res. and R.F.C.

Temp. Capt. C. M. CLEMENT, Gen. List and R.F.C.

2nd Lieut. J. E. DE WATTEVILLE, Cam. Hrs. and R.F.C.

2nd Lieut. (Temp. Lieut.) C. M. DOWN, Herts. and R.F.C.

Temp. 2nd Lieut. C. G. DURHAM, Gen. List and R.F.C.

2nd Lieut. (Temp. Lieut.) A. H. GEORGE, Ches. and R.F.C.

Temp. 2nd Lieut. (Temp. Capt.) H. J. LARKIN, Gen. List and R.F.C.

Lieut. (Temp. Major) L. W. LEARMOUNT, M.C., R.F.C., Spec. Res.

2nd Lieut. (Temp. Capt.) T. MACLEOD, R.F.C., Spec. Res.

Temp. 2nd Lieut. E. R. PENNELL, Gen. List and R.F.C.

Temp. 2nd Lieut. J. R. SMITH, Gen. List and R.F.C.

Temp. Lieut. B. A. TAYLOR, R.F.C.

Temp. Capt. R. M. THOMAS, Gen. List and R.F.C.

14956 1st Air-Mech. (Act. Corpl.) A. BEEBEE, R.F.C.

65005 2nd Air-Mech. W. HARPER, R.F.C.

51088 2nd Air-Mech. H. McMILLAN, R.F.C.

#### *Medaille Militaire.*

77354 2nd Air-Mech. E. BOWEN, R.F.C.

7504 Sergt. J. BROWN, R.F.C.

4240 Corpl. J. RICHMOND, R.F.C.

12315 2nd Air-Mech. E. H. SAYERS, R.F.C.

8197 1st Air-Mech. E. TREHEARN, R.F.C.

### More French Crosses for the R.F.C.

ON July 11th the French Official Journal published the text of an Army order conferring the French Cross of War and Palm upon the following members of the British R.F.C. in France: ELDER, DAVIES, DRAPER, PEARKS, DALLISON, NEWBERRY, REES, POTTER and GLEN.

### Raid Honours for R.F.C.

It was announced in the *London Gazette* of July 17th that the King has been graciously pleased to approve of the award of the Military Cross to

Captain JOHN PALETHORPE, R.F.C.—During a recent hostile air raid Captain Palethorpe, with 1st Cl. Air-Mech. J. O. Jessop, R.F.C., as gunner, was engaged in an endurance trial from a testing squadron. When about three miles from the coast a formation of seventeen enemy aeroplanes was sighted. Captain Palethorpe at once attacked with great courage and determination, under very heavy fire until the gunner was killed. He then landed, and having procured another gunner, endeavoured to renew the attack.

Mentioned in despatches for gallant and distinguished services in connection with recent enemy air raids:—

No. 25501 1st Cl. Air-Mech. JAMES OLIVER JESSOP, R.F.C. (killed in action).

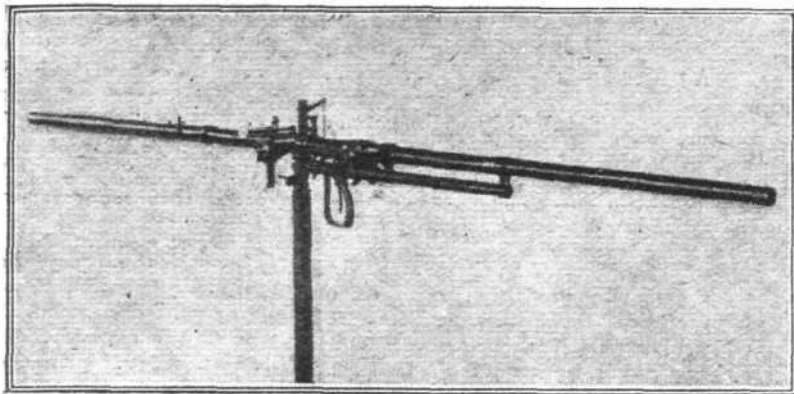


## FROM OTHER LANDS.

## THE NON-RECOIL GUN.\*

ALTHOUGH this novel type gun was invented and has been manufactured in large numbers in America, until recently little was known by the general public of this latest addition to the modern weapons of warfare.

The gun was designed primarily for use on aeroplanes where the limitations imposed as to weight and stability upon discharge at once debarred the use of the ordinary type of gun in any but the smallest sizes. In fact, these limitations had restricted the armament of aircraft to machine rifles and bomb-dropping devices, both of which had their defects.



2-pounder non-recoil gun in firing position.

The advent of the non-recoil gun has at once overcome these defects and bids fair to give the aeroplane a power undreamed of a few years ago.

The success of the guns in the smaller sizes, up to and including a 3-inch gun of 1,100 foot-seconds muzzle velocity, has been clearly demonstrated. It only remains for the development of the larger aeroplanes, a contingency of the very near future, to show the tremendous possibilities of larger and more powerful non-recoil guns. Indeed machines are being constructed in Europe at the present time that are

the rear projectile and when unlocked it rotates in its mounting, slides to the rear clear of the front barrel, and swings to the right and down giving unobstructed access to the breech of the front barrel for loading. This breech opening operation effected by continuous pressure on a single handle constitutes a simple and easily operated breech mechanism, comparing favourably with the latest type of quick-firing guns.

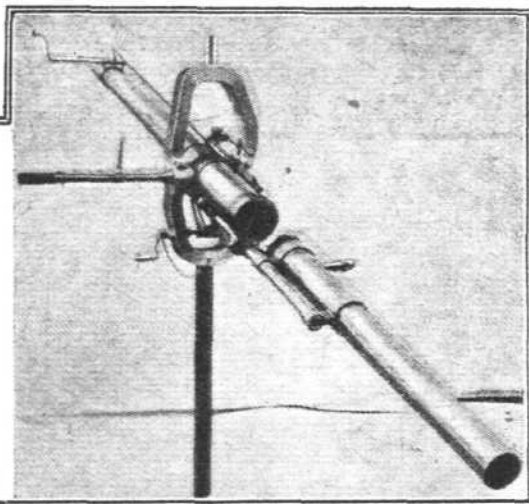
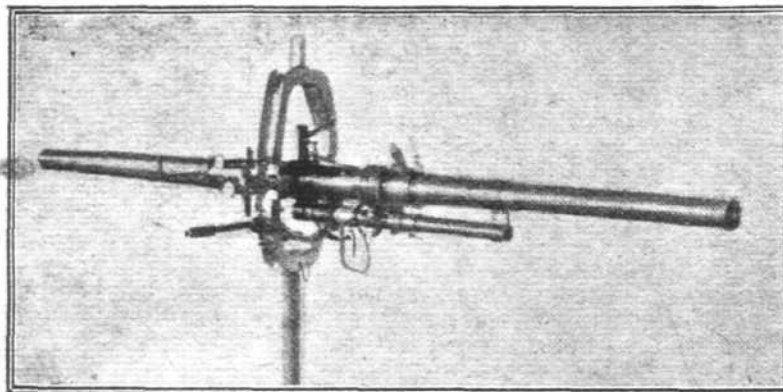
The cartridge case is of brass in outward appearance quite like that of an ordinary piece of ammunition. The projectile occupies the front end, the powder charge the midsection and the recoil charge of fine lead shot the rear end. This charge with its wads is approximately equal in weight to the front projectile, the difference being due to the difference in frictional resistance between a solid body in a rifled bore and a more or less dispersed one in a smooth bore. Upon discharge it quickly breaks up and loses its velocity a few yards from the rear muzzle, and so is not a menace to anyone behind or below.

The guns, as illustrated herewith, are of extremely simple design throughout and have proved reliable under all conditions of service. The number of parts is small and the construction is relatively simple and rapid.

The foregoing applies particularly to 2-pounder, 6-pounder and 12-pounder guns, ranging in weight from 60 pounds to 210 pounds, and having an average muzzle velocity of about 1,100 feet per second. These three types of guns represent practically the entire output to date, as they were the most suitable for the type of aeroplanes in service at the beginning of the present war.

In addition this novel weapon will offer a means of attack against submarines. This type of vessel is entirely immune from ordinary gun fire, and no satisfactory method of defence against its attacks has been developed in the present war. While, as is well known, an observer at or near the surface of the water cannot detect the presence of a submarine, it is also true that it becomes visible when the observer is at a considerable height above the surface of the sea and nearly vertically over the vessel. During an attack a submarine will ordinarily run at such a depth as to be immune even from

A 12-pounder gun ready for action, and on the right, opened to receive charge.



large enough to mount a 6-inch non-recoil gun that will practically equal in power the siege guns of that size used in land operations at the present time.

One type of construction has been followed in all guns manufactured to date, and the general design is briefly as follows: The gun is composed of two separate barrels joined together by an interrupted screw thread. The front barrel, chambered at the rear end to receive the projectile and case, is rifled; the rear barrel is of uniform bore throughout and is unrifled. Its function is to provide the necessary travel for

\* Scientific American.

vertical fire, but at intervals, in order to correct its course, the boat must come sufficiently near the surface to take observations through her periscopes. While making such observations the hull of the boat will be only from 13 feet to 15 feet below the surface of the water, while the top of the conning tower will be only from 6 to 9 feet. Under such conditions the boat will offer a fair target to an armed aeroplane provided the latter can manoeuvre itself into a position nearly vertical over the boat, and even a 3-inch non-recoil gun would be of sufficient power to traverse the intervening water and penetrate the deck of the submarine.

#### Photographs Wanted for National War Museum.

THE Committee of the National War Museum are anxious to make, as far as possible, a complete history of the war in photograph, and make an appeal to friends and relations of officers now serving, or who have at any time served, with the Forces, including the R.N.A.S. and R.F.C.,

during the war, for free gifts of bromide photographs. Such photographs should be unmounted and printed on bromide paper. If the donors will write on the backs of the photographs such details as will form a concise biography, with dates of promotion, distinctions, &c., they will very materially assist the Committee. All photographs received will be duly acknowledged.

# ROYAL AERO CLUB OF THE U.K.

## OFFICIAL NOTICES TO MEMBERS.

### Club House.

The following prices have been fixed for the present by the Committee:—

Bedroom (including Bath)	.. 5s. each per night.
Breakfast .. ..	.. 2s. 6d.
House Luncheon .. ..	.. 2s. 6d.
House Dinner .. ..	.. 3s. 6d.

### Billiard Room.

The Billiard Room is now open for the use of the Members.

### THE FLYING SERVICES FUND administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

### Subscriptions.

	£	s.	d.
Total subscriptions received to July 10th, 1917	11,842	8	9
Collection made at Church at the Royal Naval Air Station, Calshott		1	1
Staff and Workers of Gwynnes, Ltd. (Forty-second contribution)		9	9
G. H. Mansfield, Managing Director of the Aircraft Supplies Co., Ltd., 17, John Street, Theobald's Road, W.C.; Proceeds of the sale of copies of "Standard A.G.S. Parts for Aircraft," by Bernard Isaac (Fourth contribution, making a total of £17 5s. 6d.)		4	0
Air Mechanic		0	5

Total, July 17th, 1917.. .. 11,857 5 7

B. STEVENSON, Assistant Secretary.

3, Clifford Street, New Bond Street, W. 1.

## THE STUPENDOUS EXPANSION OF AVIATION.

IN the course of an interview on July 11th, Dr. Addison, M.P., the Minister of Munitions, gave an outline of the development of the aircraft industry, emphasising its vital importance by the statement that it was one of the biggest tasks that the Ministry had to face. Since January last, when the Ministry became responsible to the Flying Services in matters of supply, the programme had been steadily and largely increased. It was still expanding, and no limit could be set to it till we had a sufficiency of aeroplanes and seaplanes both for attack and for defence. "The single fact," said Dr. Addison, "that no fewer than 1,000 factories are engaged on some process or other connected with the construction and equipment of the flying machine proves the magnitude of the work we have in hand. As for output, it is increasing by leaps and bounds. If for the purposes of comparison you put the number of aeroplanes produced in May, 1916, at 100, then in May of this year the number rose to rather more than 300. Even this rate of increase is being accelerated. The output in December will be twice what it was in April, and the December total will be far surpassed in succeeding months. The number of aeroplane engines turned out monthly has been more than doubled this year already, and this total will be doubled again before the close of the year.

"A growing number of workers are employed in the aeroplane factories, the increase in the last five months being 25 per cent. on the previous total. Along with this, the replacement of skilled workers by women has gone on, the dilution percentage having risen from 19 to 37 per cent. To meet the demand for labour, special schools have been started all over the country, where a training of about two months qualifies a pupil to carry out some simple process in aeroplane manufacture. About a hundred qualified workers are supplied each week under this system. Yet the demand is not satisfied. More and more women are wanted, both in London and in the provinces; and women of good education and good physique can render the nation no better service at the present time than by undergoing the training which is offered in these schools. The Ministry

of Munitions has had special difficulties to overcome to reach the present degree of output and efficiency. The technical development of the aeroplane had presented peculiar problems. New types are continually being evolved. It has never been possible to say, 'This is the final form the aeroplane will assume,' and lay constructional plans accordingly.

"Those responsible for the manufacture of our flying machines have always had to allow for a new invention coming along and revolutionising all their projects. Speed, climbing power, armament, have continually increased and improved since the outbreak of the war. An engine that can develop up to 350 h.p., for example, and a single-seater scout able to travel at 150 m.p.h., are built on very different lines to their prototypes of August, 1914. Where there is no finality there is a limit to standardisation, except in small details, and the problem of supervising the manufacture of our aeroplanes is correspondingly complicated.

"The variety of materials used in aeroplane construction, again, has been a great source of anxiety to the Ministry. Linen, timber, chemicals for tightening the fabric of wings, alloy steel, light alloys, thin tubes, are among the essential requirements of the industry. Even if these were wanted in normal quantities there would be difficulty in getting enough in view of other necessities. But the needs of the aeroplane programme are enormous, almost passing belief. For our present programme of construction more spruce is wanted than the present annual output of the United States, more mahogany than Honduras can supply—and Honduras is accustomed to supply the requirements of the world. Besides this, all the linen of the type required made in Ireland, the home of linen industry, and the whole of the alloyed steel that England can produce can be used. As for flax, to meet the needs of the Air Service, the Government has actually to provide the seed from which to grow the plant essential for its purposes. Still, despite the magnitude of the demands, all the needs of aeroplane manufacture will be met. The programme before the Ministry of Munitions is that of a maximum production."

### M.P. War Committee and the Air Raid Question.

THE Unionist Committee last week passed the following resolution:—

"The Committee expresses its satisfaction that the discretion of the military commanders to use aircraft in whatever way may conduce to the successful prosecution of the war is not limited by any refusal of the Government to sanction retaliation for air raids, and urges the Government to allay public uneasiness by publishing information to the fullest possible extent of the action taken by British and French aircraft against areas behind the German lines."

At their meeting on July 11th at the House of Commons, Sir Ivor Phillips presiding, the Liberal War Committee passed the following resolutions:—

"1. That since the German Government are clearly determined to treat London as a military objective for aerial attack, it is the duty of His Majesty's Government to recognise the situation, and to take the necessary steps for the effective defence of the capital.

"2. That this Committee considers that a further debate on the air position should be held in public on an early day."

### Sir Vansittart Bowater and Air Raid Protection.

AT a meeting of the City Court of Aldermen last week, when the question of providing adequate defence against air raids was the main question, Sir Vansittart Bowater said that it was well known that early in 1914 there was not a single anti-aircraft gun in the City, and he, as Lord Mayor, approached the Admiralty, with the result that one gun was erected, with promises of more. These were duly put up, but to his surprise and the surprise of others they were removed by Lord French's orders last year. He (the speaker) went to Col. Sir Charles Wakefield, the then Lord Mayor, and asked him to make some representations on the matter. Sir Charles sent the letter to Lord French, who stated that the outer defences of London were quite efficient. "The citizens will want to know," continued Sir Vansittart, "why those guns were removed, and if they had been here what would have been the effect during the recent air raid. It was well known that the German aircraft had got through the outer defences of London, and that we had not got a gun in the City to bring them down. It was a matter that that Court should take up very seriously, and insist on the Government doing something further for the protection of the City."



## THE ROLL OF HONOUR.

Reported by the Admiralty:—

**Killed.**

Flight Sub-Lieut. E. W. Busby, R.N.  
 F 23604 Air-Mech. (1st Gr.) A. Austins, R.N.A.S.  
 L 8948 Offrs'. Stew. (3rd Cl.) W. Bishop, R.N.A.S.  
 F 9435 Air-Mech. (2nd Gr.) J. Cordell, R.N.A.S.  
 F 368 P.O. Mech. J. Gilmour, R.N.A.S.  
 F 6092 Air-Mech. (1st Gr.) F. T. Grimes, R.N.A.S.  
 F 13444 Air-Mech. (1st Gr.) A. J. Huggett, R.N.A.S.  
 F 4376 Act. Air-Mech. (1st Gr.) D. E. Pigg, R.N.A.S.  
 L 7598 Ch. Offrs'. Stew. (2nd Cl.) G. A. Russell, R.N.A.S.  
 F 3442 Air-Mech. (1st Gr.) E. W. Sanders, R.N.A.S.  
 F 12040 Act. Air-Mech. (1st Gr.) J. C. Sharp, R.N.A.S.

**Previously reported Killed, now reported Died as a Prisoner.**

Flight Lieut. G. R. S. Fleming, R.N.

**Accidentally Killed.**

Flight Sub-Lieut. S. E. Ellis, R.N.  
 Flight Sub-Lieut. R. B. Morrison, R.N.

**Died of Wounds.**

L 7600 Ch. Offrs'. Stew. (3rd Cl.) D. Rogers, R.N.A.S.

**Previously Missing, now reported Killed.**

Flight Sub-Lieut. P. G. McNeil, R.N.  
 Flight Sub-Lieut. L. H. Parker, R.N.  
 Flight Sub-Lieut. W. E. Traynor, R.N.

**Missing, believed Killed.**

Flight Sub-Lieut. E. H. Kendall, R.N.  
 Flight Lieut. W. E. Robinson, R.N.

**Wounded.**

Flight Sub-Lieut. J. A. M. Allan, R.N.

**Accidentally Injured.**

Flight Lieut. K. G. Macdonald, R.N.  
 Prob. Flight Officer D. B. Mulholland, R.N.  
 Act. Flight Commander G. M. T. Rowse, R.N.

**Slightly Wounded.**

Flight Sub-Lieut. J. C. Tanner, R.N.

**Missing.**

Flight Lieut. C. A. Eyre, R.N.  
 Flight Sub-Lieut. E. C. Hillaby, R.N.  
 Flight Sub-Lieut. K. H. Millward, R.N.  
 Flight Sub-Lieut. C. R. Pegler, R.N.  
 Flight Sub-Lieut. D. W. Ramsay, R.N.

**Previously Missing, now reported Prisoner.]**

Flight Sub-Lieut. A. H. V. Fletcher, R.N.

**Previously Unofficially, now Officially, reported Prisoner.**

Flight Lieut. C. Laurence, R.N.

Reported by the War Office:—

**Killed.**

2nd Lieut. J. S. Brasel, Aus. F.C.  
 2nd Lieut. L. W. Brooks, Hamps. and R.F.C.  
 2nd Lieut. H. W. Carter, R.F.C.  
 Lieut. E. A. Cleaver, R.F.C.  
 2nd Lieut. A. W. Erlebach, R.F.C.  
 2nd Lieut. J. H. S. Green, Newfoundland, attd. R.F.C.  
 Capt. W. P. Horsley, M.C., R.F.C.  
 Lieut. G. Leckie, R.G.A., attd. R.F.C.  
 2nd Lieut. F. Moore, R.F.C.  
 Lieut. G. Mutch, D.S.O., Gord. Hrs., attd. R.F.C.  
 2nd Lieut. F. G. B. Pascoe, R. Ir. Fus., attd. R.F.C.  
 Lieut. E. G. Rowley, Can. Inf., attd. R.F.C.  
 Lieut. W. H. Ryder, Yeo. and R.F.C.  
 2nd Lieut. W. G. Salmon, R.F.C.  
 2nd Lieut. R. Tardugno, R. Welsh Fus., attd. R.F.C.  
 2nd Lieut. J. Y. Taylor, E. Lancs. and R.F.C.  
 Capt. F. Wyatt, Suff., attd. R.F.C.  
 2nd Lieut. J. E. R. Young, R.F.C.  
 49214 2nd Air-Mech. G. C. Bonny, R.F.C.  
 1872 Sergt. L. Gray, R.F.C.  
 77922 2nd Air-Mech. W. Pocock, R.F.C.

**Previously Missing, now reported Killed.**

2nd Lieut. A. L. Constable, R.F.C.  
 2nd Lieut. S. W. Mann, R.F.C.  
 Lieut. T. A. Methers, Sask., attd. R.F.C.  
 2nd Lieut. A. B. Morgan, R.F.C.  
 Capt. W. E. Nixon, K.O.S.B., attd. R.F.C.  
 2nd Lieut. J. Smyth, R.F.C.

**Died of Wounds.**

2nd Lieut. T. Littler, R.F.C.  
 Lieut. S. F. Trotter, Can. Inf., attd. R.F.C.

**Previously Wounded, now reported Died of Wounds.**

Lieut. H. K. Sykes, R.F.C.

**Previously Wounded and Prisoner, now reported Died of Wounds as a Prisoner in German hands.**

2nd Lieut. R. E. Adeney, R.W. Surr., attd. R.F.C.

**Previously Missing, now reported Died of Wounds as Prisoners in German hands.**

2nd Lieut. E. T. Dunford, R.F.C.  
 2nd Lieut. R. W. Follit, R.F.C.  
 Lieut. T. Langwill, R.F.C.

**Died.**

2nd Lieut. R. G. Simmonds, Worc., attd. R.F.C.  
 77749 2nd Air-Mech. S. L. Cladish, R.F.C.  
 39054 2nd Air-Mech. J. C. Frampton, R.F.C.  
 41936 1st Air-Mech. J. W. Thomas, R.F.C.

**Previously Missing, now reported Missing, believed Killed.**

Lieut. H. G. K. Cotterill, R.F.A., attd. R.F.C.

**Wounded.**

2nd Lieut. E. L. Ardley, K.R.R.C., attd. R.F.C.  
 Lieut. F. L. Baker, W. Ont., attd. R.F.C.  
 Capt. M. G. B. Copeman, Leic., attd. R.F.C.  
 Capt. I. G. Elias, R.W.F., attd. R.F.C.  
 2nd Lieut. W. R. Exley, R.F.C.  
 Lieut. W. Gaunt, M.G.C., attd. R.F.C.  
 2nd Lieut. A. S. Goodwin, Sco. Bdrs., attd. R.F.C.  
 2nd Lieut. E. W. Hadrill, R.F.C.  
 2nd Lieut. R. J. Housden, R.F.C.  
 Lieut. M. K. Jones, R.F.A., attd. R.F.C.  
 Capt. A. G. Knight, D.S.O., M.C., R.F.C.  
 2nd Lieut. W. Lingard, Man. and R.F.C.  
 Lieut. V. W. Nutkins, R. Scots Fus., attd. R.F.C.  
 2nd Lieut. C. R. Richardson, R.F.C.  
 Capt. G. W. Roberts, M.C., R.F.C., attd. R.F.C.  
 2nd Lieut. L. A. Rushbrooke, R.F.C.  
 2nd Lieut. J. M. S. G. Stevens, R.F.C.  
 2nd Lieut. F. T. Wakeman, R. War. and R.F.C.  
 Capt. T. S. Wynn, M.C., Suff., attd. R.F.C.

**Previously reported Prisoners, now reported Wounded and Prisoners in German hands.**

Lieut. R. J. Bevington, R.F.A., attd. R.F.C.  
 Lieut. A. Burbury, M.C., Yorks., attd. R.F.C.  
 2nd Lieut. E. A. Lloyd, Yeo. and R.F.C.

**Previously Missing, now reported Wounded and Prisoner in German hands.**

Lieut. V. C. Morris, Army Cyc. Corps, attd. R.F.C.

**Missing.**

2nd Lieut. A. R. Adam, Sea. Hrs. and R.F.C.  
 2nd Lieut. W. H. Clark, Middx. and R.F.C.  
 2nd Lieut. H. C. Clarke, D. of Corn. L.I., attd. R.F.C.  
 2nd Lieut. H. C. Farnes, K.R.R.C., attd. R.F.C.  
 Capt. W. W. Fitzherbert, R. Sussex, attd. R.F.C.  
 2nd Lieut. J. V. A. Gleed, R.F.C.  
 2nd Lieut. H. Smither, R.F.C.  
 2nd Lieut. H. J. Watlington, R.F.C.

**Previously Missing, now reported Prisoners in German hands.**

Lieut. A. S. Bourinot, Quebec, attd. R.F.C.  
 Lieut. H. H. Cotton, Can. Inf., attd. R.F.C.  
 Lieut. J. H. H. Goodall, Y. and L.R. and R.F.C.  
 Lieut. A. B. Raymond, A.S.C., attd. R.F.C.  
 2nd Lieut. C. F. Smith, L'pool. and R.F.C.  
 Lieut. E. A. Stewardson, R.W. Surr. and R.F.C.

**Corrections:**

2nd Lieut. A. Smellie, R.F.A., should read 2nd Lieut. A. Smellie, R.F.C.

**Previously Missing, now reported Killed.**

Capt. A. G. Knight, R.F.C., should read Capt. A. G. Knight, D.S.O., M.C., R.F.C.

**"Killed in Action"—Unofficial.**

WHILST attacking the Hun raiding squadron, July 7th:—  
 Lieut. Wilfrid Graham-Salmon, R.F.C.  
 2nd Lieut. J. E. R. Young, R.F.C.  
 Aerial Gunner Taylor (his Observer).

# ANSWERS TO CORRESPONDENTS

[As a number of letters reach us signed with initials only, some of which do not give a complete address, we would point out that such communications cannot be dealt with in our columns. Full name and address, which will not be published, must always be given.—ED.]

## Notice to Correspondents in General.

Applications for commissions in the Royal Naval Air Service should be addressed to the Director of Air Services, Admiralty, S.W. The necessary form and conditions of entry can be obtained from the Secretary of the Admiralty.

Applications for commissions in the Royal Flying Corps should be sent to the Director-General of Military Aeronautics, Hotel Cecil, Strand, W.C.

Those who wish to enlist in the R.N.A.S. should apply to the nearest naval recruiting station or to the R.N.A.S. Drafting Office, Crystal Palace, S.E. Skilled mechanics are taken whatever their army classification, but unskilled men are only taken if they are classified B1, B2, or C1.

Recruiting for the R.F.C. is closed for the time being, and any enquiries should be made to the Officer Commanding, Royal Flying Corps Depot, Farnborough.

Enquiries with regard to appointments in the A.I.D. should be addressed to the Chief Inspector, Aeronautical Inspection Department, Hotel Cecil, W.C. 2.

**G. W. B.** (Gosport).—It is not possible, from your sketch to decide what type of machine is represented. The tail planes and tail outrigger do not somehow look correct. The tail booms would scarcely converge, as shown in the sketch, both in plan and side elevation.

**L. H. R.** (Cricklewood).—It is impossible to state in general terms the increase of speed obtainable with a variable angle of incidence. The advantages of the variable angle are that for any given speed of which the machine is capable the correct angle can always be found, at which the body is in a horizontal position, thus offering a minimum of resistance. That the fixed angle of incidence does not and cannot give maximum efficiency throughout the entire range of speeds will be readily understood when it is realised that, in a machine having its angle of incidence fixed, there is only one speed at which the maximum efficiency is obtained, namely, the speed in horizontal flight at which the machine flies with its body horizontal. Any change in the speed caused by a variation in power through the intermediary of an alteration of the angle of incidence (the flight path is assumed to be horizontal) necessitates a change in the attitude of the whole machine, which again means that the flight path is no longer parallel with the centre line of the body. The result is that the air, instead of flowing along the top and bottom of the body and causing skin friction only, strikes it at an angle, on top at higher speeds and on the bottom at lower speeds. For example, suppose a machine, flying with its fuselage horizontal, will maintain a horizontal flight path with its engine on three-quarter throttle. Now, if the throttle is opened fully the angle of incidence will have to be diminished in order to keep the flight path horizontal, or, in other words, to prevent the machine from climbing. As the angle of incidence is fixed it can only be diminished by changing the attitude of the whole machine, that is to say, by letting it fly "tail high."

Again, for flying at low speeds, the engine is throttled down, and the angle of incidence increased by letting the machine fly *cabré*, i.e., with the tail down, a position which always carries with it the possible danger of a tail slide in case of engine failure. In both cases the air, instead of causing skin friction only, exerts a pressure on the detrimental surface presented by the top or bottom of the body in the "tail high" or "tail low" position respectively. One of the most successful machines with variable incidence was the French Paul Schmitt biplane, which established several world's records in the summer of 1914, before the outbreak of war. A similar machine, fitted as a seaplane, is now, we believe, being built and successfully flown in America.

**A. U.** (Cadet, R.F.C.).—During the war we are not permitted to publish illustrations of British machines, and cannot, therefore, assist you in the matter of identification of the various types. We were under the impression, however, that the R.F.C. had already issued charts showing the various Allied aeroplanes and that these charts were available for members of the Flying Services. Probably, on making inquiries, you may be able to obtain them from your Commanding Officer.

**A. R. M.** (Tooting).—The world's duration record for an aeroplane with pilot only on board was established by the German aviator, Reinhold Boehm, on July 11th, 1914. Starting from Johannisthal aerodrome at 5.52 p.m. on a Friday, he did not land until 6.4 p.m. the next day. The machine he used was an Albatros biplane with 75 h.p. Mercedes engine. At the start of the 24 hours 12 mins. flight the machine carried 600 litres of petrol and 50 litres of oil.

**M. P. L.** (Clapham Common).—The reason for the difference in the angle of incidence of the right and left hand wing tips of the Albatros D1, described in "FLIGHT" recently, is that, when the engine is running, the torque tends to rotate the machine around its longitudinal axis in the opposite direction to that of the rotation of the engine. As the engine is a right-hand one, it follows that there is a tendency for the machine to tilt over to the left. As the angle of incidence of the left wing tip is 4° and that of the right wing tip 2°, the left wing lifts more than the right, thus providing a restoring couple. This alteration in the angle of incidence is employed by many designers, although there are some who prefer to have the angle of the two wings the same, but to connect the *ailerons* up in such a manner that when the control lever is held centrally the *ailerons* provide the restoring couple. Your second question regarding the sending up of aeroplanes before raiders arrive cannot be dealt with in the short space available in this column.

## Sound Waves.

We have received from McE. (Cricklewood) the following: "Concerning the discussion in "FLIGHT" recently about sound waves, Mr. S. T. G. Andrews, B.Sc., seems to think that the sound rises as the machine approaches.

"Several of my friends whom I have asked are sure that the sound falls as the aeroplane approaches. As we are near the Beatty School of Flying we have Caudrons and Wrights passing over us every day, and I have spent considerable time making sure of the fact C. A. H. (Barnet) noticed."

**X. Y. Z.**—An allowance of £8 for uniform is made when you join the R.F.C. Cadet Corps. On obtaining your commission this amount is increased by £42, bringing the total allowance up to £50.

**E. J. McI.** (Gillingham).—The function of the dihedral angle was explained in our "Answers to Correspondents" column on page 130 of our issue of February 8th, 1917. When a flat plane moves through the air parallel to its chord, i.e., with no angle of incidence, it gives no lift. As the angle of incidence is increased the lift increases, approximately in the same proportion, up to a certain angle. When this angle is exceeded the lift begins to decrease again. So with a cambered plane, except that for the latter the angle of no lift is generally negative, a cambered section giving a certain amount of lift even at no angle of incidence. The chief advantage of staggering the planes of a biplane is that by so doing the view in a forward and downward direction is improved. Also there is a slight gain in efficiency attending the employment of staggered planes.

**W. D. K.** (Sanderstead).—The identification marks of the various belligerent countries were described and illustrated in our issue of September 14th, 1916.

**P. W. S.** (Maida Vale).—For an elementary book on aero engines, we can recommend "Aeronautical Engines," by F. J. Kean. A copy may be obtained from the offices of "FLIGHT," the price being 6s. 6d., post free.



## CORRESPONDENCE.

**An Engineer Officer's Views upon the Future of Flying.**

[1938] The future of flying, the method of transport, involving more change in thought and life than has been caused by any other locomotion, can lie only in speed. All things valuable are rare, and exclusiveness is the highest form of rarity. Speed is comparative, from crawling to walking, from walking to running, from running to cycling, from cycling to water-transit, from water-transit to rail-transit, from rail-transit to motor-transit, from motor-transit to flying, the whole matter is one of speed. Regarding flying as a commercial proposition, in a broad sense, there can only be one advantage that it possesses over other transport—that of speed. Economy it can never hope to achieve; concerning comfort and safety it must ever take a secondary position. Travelling speed in civilised countries has already attained a practical limit; it is impossible to drive a modern car at full speed on modern roads. The limit lies in the road. There is no limit in the air. The possible attainment of speed in the air with the aeroplane as at present designed has nearly been reached. Machines are being made at the present time with a variation of speed from 50 to 150 m.p.h., and it is unlikely that a much greater speed variation can be obtained. 50 m.p.h. is already a high speed at which to land a machine, whereas 150 m.p.h. is a low speed in the air. A speed of over 50 m.p.h. in a motor car requires expert driving, and a speed of 100 m.p.h. in a motor car requires most exceptional handling. It may be assumed, therefore, that machines to fly, commercially, at over 150 m.p.h. must have special means of landing. It has been shown, theoretically, that were it possible to design a flying machine of streamline shape, without excrescence beyond the streamline, the resistance to forward travel would practically amount to skin-friction only. In such case it must be remembered that skin-frictional resistance does not increase as the square of the speed (as does head resistance), but has a much smaller value. Accepting these statements made as proved, it follows that the future flying machine must be one attaining a maximum speed, with a special landing apparatus. Arguing further, it is seen that the machine must be of streamline form, practically without head resistance, capable of holding maximum speed, and preferably landing at maximum speed. The essentials for the future flying machine may now be scheduled. They are:—

1. Minimum head resistance.
2. A streamline shape.
3. High loading, on a single surface.
4. Automatic control, independent of human agency.
5. Multiple engines to ensure landing at specified stations only.
6. One speed only.

The problem becomes that of a projectile, travelling between fixed landing places. The landing and starting of such machines can be arranged only at special stations. These stations would be equipped with wind tunnels for landing and catapults for starting. The wind tunnel would be of large size, minimum of about 300 ft. in diameter, with blowing engines arranged behind a screen forming end of wind tunnel. The screen would be pierced with holes, through which air would issue, to give a wind stream in tunnel slightly above maximum flying speed of machine. In the tunnel would be arranged a catapult some 150 ft. high, pivoted at ground level. The machine about to land would wireless its speed to controller of wind pressure, who would wireless back that

a correct pressure was being provided. The machine would then fly into tunnel, stop in midair, and the catapult would come under machine through its radial travel. The launching of machines would be carried out by the same catapult, its radial travel having a speed to correspond with flying speed of machine about to be started. The matter presents no unsolved difficulties to engineers. A station for receiving and launching aircraft, as described, up to 150 ft. span, could be erected for less than half a million pounds, and speeds of 300 to 400 m.p.h. could be maintained between stations.

For such speeds, far in advance of anything possible with any other method of transport, there would be a commercial market. The construction of flying machines for such flight also involves no unsolved mechanical problems. The lenticular truss, the most perfect form of all trusses, can be used in construction. The engines, passengers, goods, &c., will all be carried within the surfaces of the plane itself, the maximum depth of the plane being at its lateral centre and at some 30 per cent. of its span, longitudinally. The top and bottom covering of plane would be of thin metal, and the propellers would be at least four in number, covering a sectional area equal to twice the lateral span of plane. Lateral stability will be controlled from a master gyroscope, and this same gyroscope, maintaining a horizontal datum, will provide a fixed reference to which all angles of ascent and descent can be referred. Travel with such flying machines must, of necessity, be expensive, but the advantage of speed will soon make such travel a necessity, and therefore a commercial success.

"ENGINEER OFFICER."

[Although we cannot altogether agree with the writer in his views as set forth, we are inclined to think that he is right as regards the difficulties of landing at speeds exceeding 50 m.p.h. Also, the speed range of the modern aeroplane is already so great that we very much doubt whether any very great increase in this range is likely to be reached, at any rate with fixed camber and wing area. By employing one or the other of these two as a variable factor in the equation of flight it would appear—and this is, we think, generally conceded—that the range of flight speeds could be materially extended. That there are mechanical difficulties, and very great ones, to be overcome in solving this problem, we are well aware. Attempts have already been made in various quarters and along different lines, and although so far nothing of a revolutionary character has yet been evolved, we incline to think that the next step in the quest for higher speeds, which are at present mainly limited by considerations of reasonably low landing speeds, is likely to take the form of a method of varying either the camber or the area. The scheme outlined by "Engineer Officer" appears to have certain disadvantages. For instance, the power required to provide an air current of the volume and velocity mentioned would be enormous, granting that it is a mechanical possibility at the present time. Also, a "one-speed" machine would be at the mercy of its engines, since in case of engine failure and the machine having to land at such an enormous speed, certain destruction would appear to be inevitable. Even with multiple engines, as specified by the writer, there would always be the danger that the machine, although coming down a very gentle slope, would not reach its station. However, the scheme, although at present appearing a thing of the very distant future, is a fascinating one, and should at least be useful in aiding one to think of the future along broad lines.—ED.]

**Fatal Accidents.**

On July 11th an accident took place resulting in the death of 2nd Lieut. Cathie and 2nd Lieut. H. W. N. Williams, both of the R.F.C. While flying in the vicinity of their aerodrome the petrol tank caught fire, and their bodies were burnt almost beyond recognition.

A verdict of "Accidental Death" was returned on the 11th inst. at an inquest in the Eastern Counties on the body of 2nd Lieut. Jakins, 20, an assistant flying instructor, whose machine crashed after the engine had stopped.

At an inquest at Croydon on July 11th on the body of Lieut. S. N. Evans, R.F.C., 26, the theory was advanced that while in the clouds something went wrong with the controls of his machine, which crashed to earth. A verdict of "Accidental Death" was returned.

Flight Sub-Lieut. D. B. Morrison, 22, was killed last week by the fall of his machine, and at the inquest at Chatham on July 14th it was stated that he had flown in Gallipoli and France.

A verdict of "Accidental Death" was returned at an inquest on July 16th, at Brockenhurst, Hants, on the bodies of Flight Comdr. H. E. Van-Goethem, R.F.C., of Parkstone, Dorset, and 2nd Lieut. I. M. Tatham, of Natal, South Africa. The evidence showed that Flight Comdr. Goethem was giving the junior officer his first instruction in flying a particular type of machine, when it nose-dived to earth and burst into flames. Both officers were killed.

**Ploughman Killed by Aeroplane.**

It emerged at an inquest on July 12th at Lincoln County Hospital that a ploughman and one of his horses were knocked down and killed by a pilot who was making a landing. The pilot stated in evidence that he saw nothing until the accident occurred. The employer of the man who was killed said there had been some narrow escapes, and suggested that red flags should be placed where the men were working. The jury found that the affair was purely accidental.



ITALY has already issued a second aerial post stamp as a companion to the one recently referred to in "FLIGHT." The new one is for the seaplane post between Naples and Palermo, a postal service designed to avoid the risk of interference with the regular mails by U boats. A 40 centesimi express-letter stamp of Italy, printed in purple, has been surcharged in black "Idrovolant. Napoli-Palermo-Napoli. 25 cent. 25." Collectors will be puzzled, says the *Daily Telegraph* philatelic expert, to find the surcharge on a 40 centesimi express-letter stamp, which denomination has never been issued in Italy. The stamp was originally prepared in 1915, for a proposed express service, which was abandoned. So the 40 cent. stamp, without the "Idrovolant" over-print, is one of the "prepared for use but never issued" class of stamps.

LAST Saturday's false police alarm of an approaching air raid was quite worth while, as it proved to be an excellent rehearsal for the real thing. Whether it was *completely* convincing is another matter; but, except for the actual method of announcement, it would certainly appear that the general public has taken to heart the wisdom of temporarily retiring to funk-holes as an antidote to our own shrapnel. The fore and aft placard business, however, is somewhat crude in its simplicity, and moreover smacks of the ridiculous for the "wearee." Chief Police Commissioner Sir Edward Henry is apparently not over impressed with it, as he "trusts that this emergency expedient may prove ineffective."

How about the perambulating notice-boards? At what moment in the circus programme may they be considered at liberty to "retire"?

IN regard to the siren—or the foghorn on the Mansion House which the Lord Mayor craves for—warning scheme experimented with on Tuesday, one thing is certain: if this system of warning is decided upon, it must be a condition precedent that *all* other sirens or hooter distractions should forthwith come under "Dora" *verboten* regulations. Else will many a trepidation result when the regulation factory screech announces the calling together of its particular group of workers. Giant gongs as substitutes should be in request under the conditions.

As to the Tuesday test, if the syrens are supposed to have "syrened," there should be nothing doing with them as

warnings. Never a sound was heard in St. Martin's Lane, although naturally we were on the alert. Neither have we so far discovered anyone who *did* hear them. Syrens may be all right for suburban places, but for London with its traffic they are a washout.

WITHOUT doubt, as reported from Switzerland, the Huns are now concentrating upon aeroplane construction at Friedrichshaven and elsewhere as opposed to Zeppelin building, but this must not mean any relaxation in our night watch for these night birds. Moreover, they will still be built in moderation, as dirigibles are still an urgent necessity for the Germans, and, if anything, more so for ourselves, as long-distance scouts for the Navy. It is aeroplanes and seaplanes, however, which are going to determine the hour when peace shall come; and with sane judgment in constructing the right types of machines and engines this and the other side of the herring-pond, there need be no fear as to which side will ultimately cry "Hold, enough!"

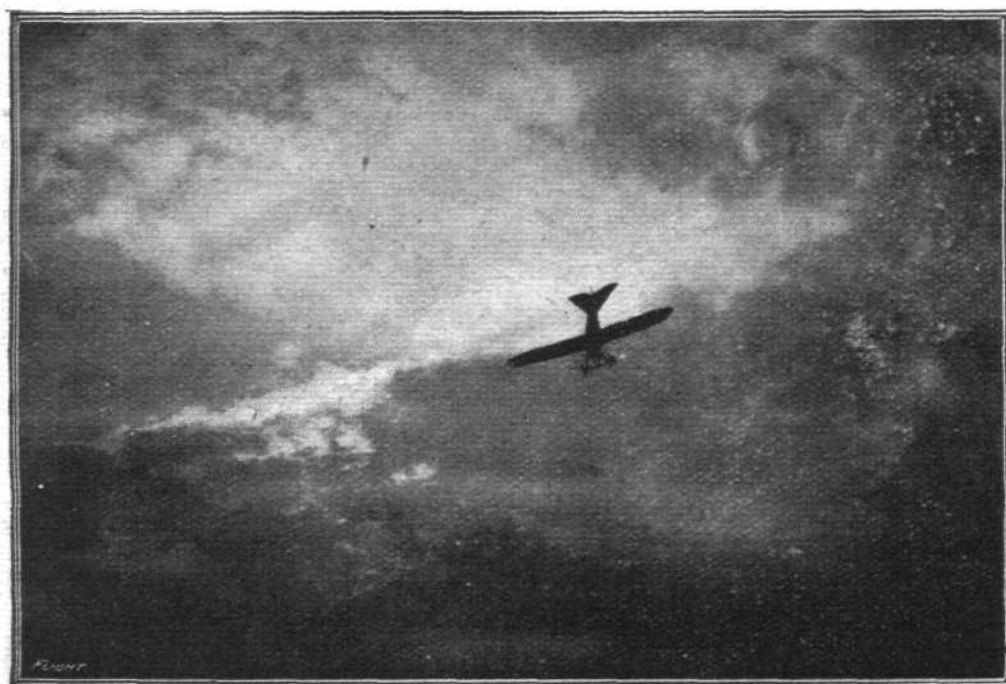
It was, indeed, considerate of the Lord Mayor at the Balfour Freedom of the City function at the Guildhall last week to include the following in the programme as a funk-hole "guide" for adjourning the proceedings:—

"Should the proceedings be interrupted by the presence of hostile aircraft, of which ample notice will be given, it is suggested that the guests of the Corporation should adjourn to the crypt beneath the Guildhall, or the adjoining crypt under the council chamber, until the raid is over.

"The staircases on the north, south and west sides of the Guildhall give access to these crypts, which are spacious, well-lighted and in direct communication with other parts of the building."

LORD SYDENHAM not only has sound views upon most subjects, and particularly on matters aviatric, but invariably has a happy and concise way of expressing them. In the course of an article in the *Observer* of Sunday upon "Air Raids and Air Power" and "Defence Problems," Lord Sydenham summarises and criticises the position in regard to attacks upon the Metropolis as follows:—

"If, on the 7th inst., we had been able to put a squadron of fighting machines in the air, the enemy's formation would have been broken up, and his losses must have been severe. Our airmen at the Front have shown what they can do even against odds, and when we make it clear that no raid can be



A striking photograph, which comes to us from Mr. W. H. Sheahan, one of the Directors of the Aero Club of Pennsylvania, who sends a sympathetic greeting to British aviators who are to fly side by side with American pilots, in "strafing" the Huns.



undertaken without great risk, we shall have done all that is possible to protect our people. For this purpose, I believe, as I stated in the House of Lords, that two full squadrons of fast fighters, always ready to take the air, would suffice; and while I would not withdraw a single machine from the Front, where we are in need of more, I consider that those allotted to home defence should not be sent across the Channel even temporarily, as their absence would certainly be known to the Germans. I assume that it will be possible to provide two squadrons, with a reserve, immediately.

"Much more is needed, however. It is futile to send a few scattered aeroplanes to attack such a force as the enemy employed on the last occasion. Our squadrons must be kept together at positions not difficult to determine, and held in absolute readiness precisely as if they were at the Front, as, in fact, they would be. Competent authority to order them to take the air must always be on the spot. The organisation of observation posts and telegraphic communication, involving the fullest co-operation with the Navy, must be perfected. There is some reason to think that it has hitherto left much to be desired. With this system of communication that of issuing warning to the population can be combined.

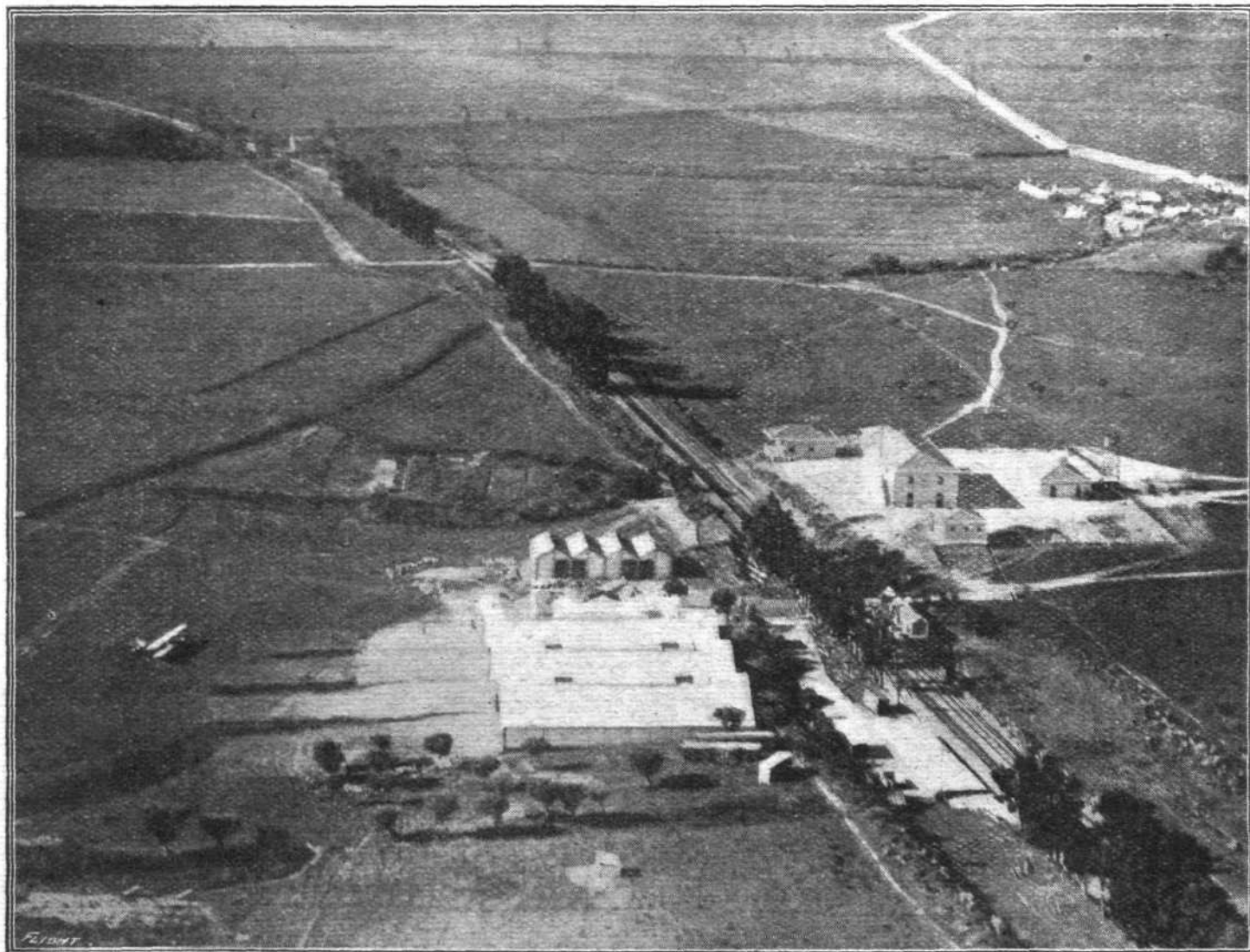
"The raids have two objects: (1) To shake the *moral* of our people and encourage the Pacifist movement; and (2) to induce us to withdraw fighter machines from the Front, just as, at the beginning of the last century, Napoleon endeavoured, by threats of invasion, to entice the fleet away from its proper duties. If we were to comply with some of the demands now made we should play into the hands of the Germans.

"The ineptitude which has been shown in dealing with air questions is explained by our inability to realise what air power has rapidly become. The attempt to treat it as a subordinate adjunct, naval or military, led to mistakes of many kinds which have not yet been redeemed and were heart-breaking to the younger men, who saw clearly the opportunities that were lost. A new arm has arisen which

has revolutionised the art of war and brought new psychological conditions into play. Happily for us the new qualities required are well suited to the genius of the British people, and no finer or more daring airmen have appeared than those of the R.N.A.S. and R.F.C. But we have yet to learn how air-power must be organised, administered and handled. It is certain that a sufficiency of aircraft would quickly end the war, and it may be that the action which is being taken by the Government of the United States will prove decisive. Meanwhile, all that we can now do is to put the increase of the air service in the forefront of our requirements."

MR. MEREDITH BEAUMONT, writing from Putney upon the subject of compensation for air raid damage, emphasises an anomaly which for a year or two now has made many a member of the public to think furiously. Mr. Beaumont rightly points out that "It seems a most extraordinary thing that sufferers from enemy air raids receive compensation from charitable funds or from the public pocket through the taxpayer. Moreover, if a German suffers damage through the antagonism of our own people he is immediately rehabilitated at our expense."

THAT there is no dearth of material for air pilots is evident from the meetings inviting attention to this direction which have been held in certain districts in the provinces. At Sheffield, by way of example, a very encouraging response was made the other day when the Lord Mayor of that city gathered together headmasters and likely young men to listen to Major Lord Howick, an R.F.C. interviewing officer. Only a small, preliminary sort of gathering had been anticipated, but the meeting had been announced in the Press, and somewhere about 500 people were present, mostly young men between the specified ages of 17½ and 25 years. The popularity of the R.F.C. was evident from the start, and at the conclusion of the meeting about 230 of the young men eagerly took tickets entitling them to interview Lord Howick at the Corn Exchange the next day.



AVIATION IN THE PORTUGUESE ARMY.—The aviation school, Villa Nova da Rainha, taken from a height of about 300 metres.

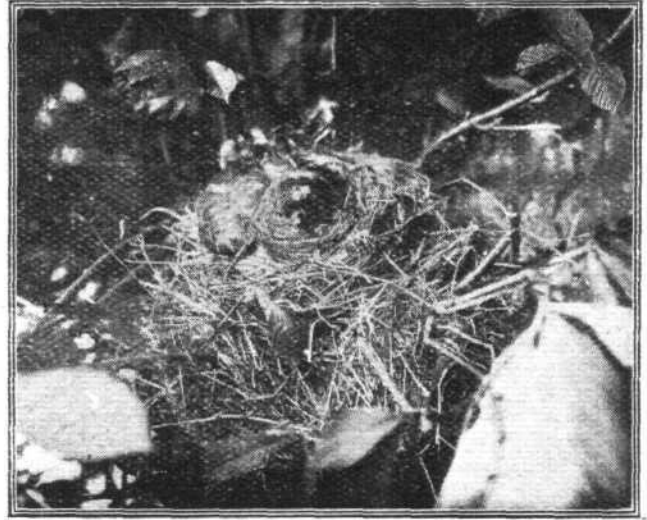
It is not surprising Lord Howick was pleased, and contrasted how the encouragement which it would give to Sir David Henderson would give equal despondency to whoever took Sir David's place in Germany, to see the material available. He explained in detail the scheme of training for officers of the R.F.C. Candidates enter a Cadet wing at the age of 18, and receive a course which generally lasts six months. There are also to be established, almost immediately, officers' technical training corps, into which boys can go at the age of 17 years and 10 months. The pay of a flying officer was £1 per day.

He impressed upon his hearers the responsibility of the work of a flying officer. Unless they had the most absolute confidence in themselves, and were certain that they could trust themselves to do all that was humanly possible to obtain the information they were sent for, and, failing that, to confess that they had failed, he asked them not to come forward. He expressed the opinion that flying was just as safe as any other branch of the Service, although its casualties were a little more spectacular. He also dwelt on the great future of aviation, both military and commercial, and pointed out that young men had the chance of being apprenticed, at the cost of the Government, to what was going to be one of the biggest industries in the country.

At the finish enthusiasm rose so high, that, in the word of the local scribe, "after a number of questions had been answered, the would-be flying men present made a kind of air raid on the interview tickets."

WITH America helping along, the air in the war zone looks like getting a bit crowded presently. Out yonder with our new Allies, enthusiasm is waxing rampant in its intensity. In some quarters, so much so, that it looks as if the rest of the fighters on behalf of civilisation may presently be able to take a rest and leave it to the States to settle. Mr. Cox, the Governor of Ohio, is an exhilarating example of the "punch" which Americans, now they have taken off the gloves, look forward to getting in on the Huns. In addressing a meeting in Indiana on July 12th, Mr. Cox was very emphatically of opinion that "American aviators flying in American aeroplanes would bring the war to an end. From facts in my possession," he said, "I have formed the positive belief that American airmen will break into the skyline of Germany like birds in migration, not to kill women and children or commit human slaughter in any form, but American bird-men, having reached Essen and Kiel, will destroy not only German's navy, but every institution which perpetuates the menace of Prussian Imperialism."

AND so say all of us.



**A FEATHERED MONOPLANE ROGUE.**—The above unique photograph is sent us by Mr. Cowper-Coles, Director of the Cowper-Coles Aircraft Co., Ltd. with the following explanation: "We enclose a photograph of a cuckoo in a robin's nest. This bird continued to make itself comfortable and to be fed by the robin until almost the size of a pigeon."

PRACTICAL sympathy! New Zealand school children of the Wellington district have raised and cabled £500 for child sufferers from the recent air raid in London.

THE antidote of the submarine—the submersible destroyer plus aircraft.

"ONE Service, one uniform, one badge." During the inquests held on July 12th at St. Pancras in connection with the recent air raid, the Coroner remarked that "there was a feeling that our Service would be very much improved if, instead of having a branch for the sea and another for the land, there was one service—unity of command. We have one Service for the Army and one for the Navy. Why not one for the air under a strong central command?"

For succinct comment upon the present fake "crisis" in Germany, commend us to the following from Mr. F. W. Wile,



American Women as Aviators.—Possibly to surpass even the great effort made by British women to help their country in this war, a school has been established near Inglewood, Cal., not far from Los Angeles, by the American Aircraft Company. Miss Alice La Chapelle is in charge of the school. The girls are stated to have formed a "complete aerial unit," and have offered their services and machines to the U.S. Government for coast patrol work. The business-like rigout of the embryo pilots, as seen in our photograph, suggests thoroughness in their desire to make good, although we doubt whether their employment at the front will be for one moment seriously considered.



late Berlin correspondent of the *Daily Mail*—and he knows his man :—

"My own opinion—though the fickle kaleidoscope which in German politics makes prophecy as good as futile—is that the 'crisis' through which Germany is passing is intended to deceive her own people and her enemies as well. Both are to be made to believe that 'democratisation' is under way. I believe that it is nothing in reality except *heavy artillery preparation for a new German peace offensive*. I believe that the Kaiser is about to whine once more, in some form or other, for an 'understanding' with his foes, in 'deference to the will of my people.' I believe that we shall be well advised to view the rumble and roar coming out of Berlin as a curtain fire of bluff and bluster, a barrage of stage-managed domestic explosions which may blast a few Ministers' reputations, but leave the Prussian system, for the purposes of the war, intact. The thing for us to do is to take to heart Mr. Lloyd George's passionate cry in the House of Commons on Friday night, 'Get on with the war.'"

"THROUGH the air to Berlin!" is the battle slogan of the United States Senate. And with a bagatelle, by way of a start, of 128 million sterling to back it, there looks like something more than air in it.

LIEUT. NUNGESSER's cap, sold at the Royal Automobile Club on Saturday, accounted for the nice round sum of £100 being added to the general fund on France's Day.

"If I were asked what event of the last year has been of *most significance to the future of humanity*, I should reply that it is not the Russian revolution, nor even the stern intervention of the United States in a sacred cause, but the appearance of a single German aeroplane flying at high noon over London last November." Thus Mr. Lovat Fraser in an estimate of progress in the third year of the war.

Is it an omen? In a large building up North, largely used by Germans before the war, which received extra special attention in the July 7th air raid from the Gotha squadron, statues of the Kaiser and Bismarck were prominent features of the "landscape" when the building was taken over by English lessees in the earlier days of the war. These statues were duly removed from their places of honour, and with other Germanic emblems were relegated to the cellar. In

the raid on Saturday the Gotha crowd found them and just bombed them to nothing. Is it an omen?

THE safest place in a room during an air raid, experts aver, is at the end of the chimney breast on or near the floor. *Verb. sap.*

A ROSE by any other name, &c. Lord Beresford deplors the use of the word reprisal, because it meant that if the Germans killed our women and children or boiled our prisoners we would do the same. That was absolutely repugnant he considers, to our race. We had always fought with clean hands. The Germans would descend to barbarities, revolting atrocities and horrors that we could never go down to. The Government should say that they were going to hit back terribly, quickly and drastically; that they were going to bomb railways and munition factories; and that they were going to warn the Germans to take their women and children out of the way.

Quite so, so long as the Government do get along with it.

### TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister Journal) of July, 1907. "FLIGHT" was founded in 1908.

"LA PATRIE'S" FRESH TRIUMPHAL FLIGHT.

Another very successful flight has just been accomplished by the French military airship "La Patrie," which is reported to have succeeded in attaining a speed of 18 miles an hour against the wind. The test commenced from the Aerostatic Park at Meudon, when, rising to an altitude of some 600 ft., the airship encountered a strong north-west wind, against which it proceeded to head its way in the direction of Paris. There several evolutions were carried out, apparently with perfect success, and after circling over a church at Montmartre, it travelled above the main Boulevards and finally came to rest for a brief spell immediately over the Place de l'Opera, where a huge crowd soon collected to watch it in rapt attention. Turning westward it quickly returned to Meudon, after having been in the air about an hour and a half. Subsequently, another journey was made with a military crew on board, the flight taking place round a circular course, via Versailles and Sèvres.

### Air Raid Warnings for the General Public.

THE following notice was issued on July 13th by the Commissioner of Police :—

"Whenever enemy aeroplanes are observed above the land in any part of a very considerable area of the Eastern Counties, the military give the London authorities the warning, 'Take air-raid action.'"

"In view of the fact that the objective of these enemy aircraft may not be the Metropolis, but towns elsewhere situated, it has been decided not to pass on this warning to the public until there are indications that the enemy aircraft are proceeding in the direction of London, and are within a certain distance of it.

"In such contingency, the authorities, realising the desirability of letting the public know in time to enable them to take cover, are endeavouring to arrange for obtaining this information, so that they may transmit it to the public.

"The Commissioner notifies for public information that in the event of his receiving intelligence that enemy aircraft are flying towards London, police, regular and special, will be sent out from all police stations exhibiting through the thoroughfares the following notice :—

**POLICE NOTICE.  
TAKE COVER.**

"Pending some more effective measure for circulating this news, the Commissioner trusts that this emergency expedient will prove not ineffective."

### That Poisonous Hun Bomb-Powder.

It is now stated, upon the authority of a medical man, that the skin inflammation caused by touching the German air-bomb powder is due to explosive chemicals and not to a poison placed in the bomb. Inflammation of the hands is not dangerous so long as they are kept clean and covered with a bandage. If any of the powder gets on the hands, it is recommended that they should be washed thoroughly and then covered with starch. This will not remove the yellow stain, but will almost certainly prevent inflammation. No poison enters the system from touching the powder.

### The Mechanical Transport Side of Aviation.

STEPS have been taken by the Technical Committee of the Motor Industries to ensure the proper representation of that body on the Civil Aerial Transport Committee. As they point out, it is patent that mechanical transport must play a very important part in any such scheme.

### A Suggested United Kingdom and Swedish Aerial Post.

It is a remarkable sign of the times that, at the present moment, even a suggestion should be made to bring into operation an aerial post between this country and Sweden. But it is a fact that at a council meeting of the Swedish Chamber of Commerce, London, it was decided to ascertain the prospects of establishing such an aerial postal service. Letters were addressed to the War Office, General Post Office and the Admiralty, to ascertain if these authorities might be expected to sanction, and eventually grant, facilities necessary for the organisation of such a service, should it be possible to obtain suitable machines. This communication was handed by the Admiralty, through the Air Board, to Lord Northcliffe's Committee, the terms of reference to which have been published. A reply was received to the effect that as the general question of international aerial communication is one of the matters which Lord Northcliffe's Committee has to consider in all its bearings, it is not possible for them now to deal with the particular application for facilities for establishing such communication at this early stage, or until the Committee's enquiries are much further advanced. The Council intimate therefore they will carefully follow the developments of aerial postal service, and will report thereon from time to time.

### Marriage under Difficulties.

It is announced from New York that the marriage has taken place of Evelyn Carbery, the well-known musical comedy actress, and Flight Lieut. J. E. Dunstan Boyd, of the British Navy. Lieut. Boyd was forced to descend in Holland some time ago, while making a flight over German territory, and was interned; but permission was recently obtained from the Dutch Government for him to go over to America for the wedding ceremony. The bride and bridegroom are to return to Holland shortly.



### Casualties.

Flight Sub-Lieutenant HUGH ALLAN, R.N., killed on July 6th, aged 20, joined the 5th Royal Highlanders of Canada in September, 1915, and subsequently took the machine-gun course at Hythe, becoming an Instructor. He transferred to the R.N.A.S. in June, 1916, and went to the front last May. Born at Montreal, Canada, he was the only son of Lieutenant-Colonel Sir H. Montague Allan, C.V.O., and Lady Allan, of Ravenscrag, Montreal, Canada, and was educated at Lennoxville Preparatory School, Eton (Eton member of Pop) and McGill College (McGill member Zeta Phitsi).

Second Lieutenant EDWIN RHODES BOTTOMLEY, R.F.A., attached R.F.C., was the second son of the late Benjamin Bottomley, solicitor, of Bradford, and of Fieldhurst, Ben Rhydding, Yorks, and of Mrs. Bottomley, of Ben Rhydding. He was educated at Shrewsbury School and was for three years a member of the O.T.C. there. On leaving he entered the firm of Lucien Marcan's Successors, of Bradford, but was only there a few months, as on the second day of the war he enlisted in the 4th West Riding Brigade, shortly afterwards receiving a commission in the same brigade. He transferred to the R.F.C. in 1916, obtained his pilot's certificate and his "wings" at the beginning of this year, and was shortly afterwards sent out. He was killed while flying over or close to the German lines on June 2nd, aged 22.

Flight Sub-Lieutenant MAURICE WILLIAM WALLIS EPPSTEIN, R.N.A.S., who was missing after the raid on Zeebrugge on May 12th, and is now officially reported killed, was the younger son of the Rev. W. C. Eppstein, Rector of Lambourne, Essex, and formerly headmaster of Reading School. Educated at Cheam School, the R.N.C., Osborne, and the R.N.C., Dartmouth, he at the outbreak of war was a Midshipman. In September, 1916, he was gazetted to the R.N.A.S. Flight Sub-Lieutenant Eppstein was 20 years of age. He was a very fine runner, and at Dartmouth was chief whip of the Britannia Beagles.

Lieutenant HAROLD HAMER, R.F.C., reported missing on June 6th, now reported killed on that date, his 26th year, was the fourth son of the late Mrs. A. A. Hamer, of Alistre, St. Annes-on-Sea. He was at Shrewsbury School (1906-10), and enlisted in the Loyal North Lancashire Regiment in August, 1914, being shortly afterwards gazetted. In 1915 he transferred to the R.F.C., and saw active service in the Sudan, being engaged in the battle which resulted in the break up of the forces of the Sultan of Darfur. In the summer of 1916 he was at Salonika, but returned to England in September. He obtained his wings early this year, and left for the front in May.

Second Lieutenant G. N. HUNSTONE, R.F.C., killed while flying in France on June 28th, was the only son of the late Mr. George Hunstone, of Manchester, and Mrs. Hunstone, of The Haven, Lingfield Avenue, Kingston-on-Thames. He was only 19 years old, and was educated at Chalmley House, Eastbourne, and Marlborough College. Joining the Artists Rifles in 1915, he received his commission in February of this year, and was gazetted Flying Officer in May, proceeding to France in June. Second Lieutenant Hunstone was killed the day after joining his squadron.

Second Lieutenant JOHN WATHEN EYTON LLOYD, R.F.C., younger son of Dr. and Mrs. Eyton Lloyd, was killed on June 24th, aged 22. He was educated at Colet House, Rhyl, and Epsom College. He was articled to the Shotton Engineering Co., and when the war broke out at once joined the Army, and after a time received his commission. He transferred to the R.F.C. He passed the several stages of his training with distinction, and was given his "wings."

Captain and Flight Commander LAWRENCE WILLIAM MCARTHUR, M.C., H.A.C. and R.F.C., previously reported missing, was killed on May 27th, aged 26. He was the only son of Mr. and Mrs. W. McArthur, of Chislehurst, Kent, and was educated at Malvern, Versailles, Tours and Heidelberg.

A member of the H.A.C. before the war, he left for the front with the first contingent in September, 1914, and in June, 1915, was awarded the Military Cross for conspicuous bravery in action at Hooge. Here he was severely wounded, and, on recovery, entered the R.F.C., and since October, 1916, has been engaged at the front. He was mentioned in despatches twice and was gazetted flight commander last January.

Second Lieutenant THOMAS CHARLES STUART MACGREGOR, H.L.I., attached R.F.C., who was killed on June 8th, aged 20, was the second son of Mr. and Mrs. W. O. MacGregor, of Hazaribagh, India. He was educated at Malvern College, and was in the O.T.C. He received his commission in November, 1914, and joined the H.L.I. in France in September, 1915. He was in the Ypres salient all that winter, and was wounded on May 10th. After three months' leave he joined the R.F.C., and was sent to the front on May 9th. He was doing useful work when both he and his observer were killed in the air by a shell.

Second Lieutenant P. C. STACPOOLE O'LONGAN, killed on June 1st, in his 19th year, was the youngest son of Mr. and Mrs. Paul O'Longan, of London, and grandson of the late Joseph O'Longan, M.R.I.A., well known in literary circles in Dublin. He was educated at King's College, and was gazetted from Sandhurst to the Royal Irish Regiment, and attached to the R.F.C. He obtained his "wings" on March 19th, and went to the front on April 26th as a scout pilot. He was an expert horseman and a good all-round athlete, and a few weeks before his death a little book of his poems was published entitled "Last Post and Other Poems," the majority of which were written in his 16th year. A reference was recently made to these poems in "FLIGHT," accompanied by a portrait of Mr. O'Longan. His commanding officer, writing his parents, says: "I send you an extract from a German document. . . . It shows, at any rate, that your son was game, and fighting to the last minute, as everyone who knew him expected him to be. According to the German message, Mr. O'Longan was brought down by enemy airmen, but, when falling, and only 200 metres from the ground, he turned his machine-gun on their fighting aeroplanes, but was shot down by rifle-fire from the ground."

### Married and to be Married.

A marriage has been arranged, and will shortly take place, between Captain WILFRID ALLAN FLEMING, Devons and R.F.C., only son of A. S. Fleming, I.C.S. (retired), Millholme, Chagford, Devon, and DOROTHY NORMA PATERSON FAIRLIE, younger daughter of Lieutenant-Colonel W. F. Fairlie and Mrs. Fairlie, Hillside, Gorey, Jersey.

The engagement is announced between Major ERNEST LESLIE GOSSAGE, M.C., R.F.A. and R.F.C., elder son of Colonel E. F. Gossage, V.D., late Brigadier-General Commanding 3rd Line R.F.A. (Territorial) Training Brigade, and Mrs. Gossage, of Dorin Court, Uptonheath, Chester, and EILEEN GLADYS, only daughter of Brigadier-General E. D. J. O'BRIEN, C.B., late 14th Hussars, and Mrs. O'Brien, the Rectory, Buxted, Sussex, and granddaughter of the late Colonel Sir Terence O'Brien, K.C.M.G., sometime Governor, Newfoundland.

An engagement is announced between Captain L. N. GOULD, M.C., R.G.A. and R.F.C., eldest son of Mr. Lionel Gould, of the Gable House, Bilton, Rugby, and BARBARA, only daughter of Mr. C. F. D. SPERLING, of Beresford House, Leamington, and Dynes Hall, Halstead, Essex.

A marriage has been arranged between Second Lieutenant C. D. KERSHAW, R.F.C., of Cape Town, and ELSIE MAY, only daughter of Mr. and Mrs. R. A. FAIRCLOUGH, of 25, Kensington Palace Gardens. The wedding will take place at St. Mary Abbot's Church, Kensington, on July 25th, at 1.30.

The marriage of Miss BETTY MICKLEBOROUGH to Mr. F. L. TRETHEWEY, of the Armoured Car Section of the R.N.A.S., took place at St. Martin's-in-the-Fields on July 17th.



A marriage has been arranged, and will shortly take place, between ARTHUR CHARLES CHAMPION RAWLINS, lieutenant, R.F.C., third son of Mr. and Mrs. Charles Rawlins, of Dunedin, New Zealand, and Sydenham Hill, S.E., and PHYLLIS YVONE MARION, elder daughter of Mr. SIDNEY H. BAKER, of 6, Marine Square, Brighton.

#### Items.

News has been received from New York of the death of Mr. HENRY FIELD, who, although an American, joined the R.N.D. early in 1915 and was transferred thence to the armoured cars. He was in charge of a squadron in France for some months and was then transferred to the R.N.A.S. On attaining the age of 21 in June, 1916, he was compelled to return to the United States. He was the second son of Mrs. Maldwin Drummond and a grandson of the late Marshal

Field, of Chicago, and was educated at Eton. He married last February Miss Nancy Perkins, a granddaughter of Mr. Langhorne, of Virginia. Mr. Field's elder brother, Mr. Marshall Field, has joined the Illinois Cavalry as a trooper.

Lieutenant WILFRED GRAHAM SALMON, who was killed in action during the July 7th air raid, was buried in Dartford Cemetery, with full military honours, on July 11th, the coffin being conveyed from the church to the grave on a gun carriage, draped with the Union Jack and drawn by six horses. The band of the Orchard Military Hospital attended, and the members of the Dartford Council and Mr. James Rowlands, M.P. for the division, were present at the service. A large number of members of the R.F.C. and many patients from the hospital were there.



## NATIONAL LIABILITY FOR AIR RAID DAMAGE.

THE Lord Mayor of London, on July 13th, headed the deputation, which comprised, among others, the Lord Mayor of York, the Mayor of Tynemouth, the Mayor of Ramsgate, the Mayor of Walsall, various Metropolitan mayors, and the chairmen of local councils and representatives of chambers of commerce and other bodies, from the Committee on War Damage, representing 718 municipalities with a population of over 28,000,000, which waited upon the Premier to put forward their case for the State assuming liability for damage done by aircraft raids to life or property. The Premier was accompanied by Dr. Addison (the Minister of Munitions) and Sir David Henderson (Director of the Air Service). Gen. Smuts was also present.

The Lord Mayor of London, in introducing the deputation, said they desired to urge upon the Government the necessity of providing, out of national funds, compensation to those who had suffered damage from the air and other attacks of the enemy.

The Lord Mayor of York urged that the Government should accept full and unqualified responsibility for damage and injury arising out of the defence of the country as the authorities did in the case of riot.

The Premier asked if he could be told something about the scheme, and not the general principles. Why was the present scheme not adequate? That was what he really wanted to know.

The Mayors of Walsall and Ramsgate then spoke as to the damage done in their areas, and stated that the scheme was not adequate for them. They were followed by the Mayor of Tynemouth.

The Prime Minister, replying to the deputation, said: "You have presented your case with great moderation, and with great force. You represent towns, some of which have sustained a good deal of damage through these insensate and barbarous raids. There is at the present moment, I understand, an insurance scheme on fairly generous and liberal lines for dealing with this problem, but I am not sure

that it is completely applicable to the facts of the case, for many reasons. First of all, there is always a difficulty in making such schemes known to smaller people, and it is not always that they can protect themselves against such attacks. There are not merely tradesmen and factory owners and owners of big properties who are suffering, but there are poor people who have got their all destroyed in these air raids, and it is just as important to them as the great factories must be to the people who are in more prosperous conditions, and they are just as entitled to protection.

"I am not sure that it is always a complete answer to them to say, 'You could have insured under some scheme.' It takes a long time, as any one of you who is acquainted with insurance companies knows, to bring the benefits of insurance to every class. You want an army of agents and an army of persuasive tongues. We have no time for that sort of thing in this war. I think myself that in principle you have certainly made out a case. I should like to consider the details carefully, and my suggestion to you is that you appoint, say, two or three, at the outside, of your number, to be in communication with me or any particular department or departments in the Cabinet who are ordered to deal with the question, for further consultation. The French Government had given a general pledge that the devastated areas should be restored. The devastation there is on a more wholesale and a more deplorable scale, and the losses inflicted are terrible. The burden which rests on the French Government will be all the greater. But whether great or small, the principle is the same. We must protect our people as far as we can against the consequences of these barbarities, and we ought to do so without distinction of rich or poor. Therefore, in principle, I accept the case you have put before me on behalf of the Government, but I should like to consider the details further, and I invite you to meet and give me the names of three of your number with whom I can have further consultation."

### R.N.A.S. Work.

THE following announcements have been made by the Admiralty:—

"July 11th.

"A report has been received from the Vice-Admiral, Eastern Mediterranean, that on the night of July 9th a successful attack was carried out by the R.N.A.S. against the Turkish-German fleet lying off Constantinople (Golden Horn). When the 'Goeben,' surrounded by warships (including submarines) had been located, the attack was made from a height of 800 ft. Direct hits were obtained on the 'Goeben' and on the other enemy ships near her. Big explosions took place on board them, and several fires were observed. The War Office was also attacked and a direct hit obtained. The enemy appeared to have been completely surprised, as until the bombs had been dropped no anti-aircraft batteries opened fire. Our force returned safely without any casualties."

"July 12th.

"Whilst on patrol on Wednesday, July 11th, a flight of five machines of the R.N.A.S. met and engaged a formation of 10 Albatros scouts and three large two-seater machines south-west of Nieuport. Three of the enemy scouts were driven down completely out of control and two others were driven down. One of our machines is missing."

"The Vice-Admiral, Eastern Mediterranean, reports that in the course of attacks on the enemy positions on the Gallipoli Peninsula, R.N.A.S. machines sank a tug lying off Chanak."

"Bombing raids were carried out by the R.N.A.S. last night (11th-12th) on the following military objectives:—Varssenaere, St. Denis Westrem, Ghisteltes, Ostend railway lines and electric power station. The railway siding at Zarren was attacked by gunfire from the air, and bombs were dropped on a train near St. Denis Westrem. A fire was caused by bombs near Ostend electric power station. A heavy explosion was also caused at Varssenaere railway dump, followed by an intense conflagration, which was still burning half an hour later. Several tons of bombs were dropped. All machines returned safely."

"July 13th.

"Bombing raids were carried out by the R.N.A.S. last night (12th-13th) on the following military objectives:—Aertrycke Aerodrome; Houttave-Nieuwmunster Aerodrome; Ghisteltes Aerodrome; railway junction north of Thourout Station; Bruges dock and canal bank dumps; railway junction south of Ostend Harbour. The visibility was generally very poor, and in consequence observation of results obtained was difficult. A bombing attack was also made on Solway Works, Zeebrugge, and root of Zeebrugge Mole. In all several tons of bombs were dropped. All machines returned safely."

"July 16th.

"During last night, July 15th-16th, several tons of bombs were dropped by the R.N.A.S. on the following military objectives: Solway Works, Zeebrugge, railway junctions and sidings at Ostend, railway sidings and dumps at Middelkerke, railway junction at Thourout, motor transport convoys, and railway sidings at Lichtervelde. All our machines returned safely."

# **AVIATION IN PARLIAMENT.**

## **HOUSE OF LORDS.**

### **Air Raid Defence and the Need for More Aeroplanes.**

LORD TENTERDEN asked, on July 10th, who was responsible for the want of facilities given for the construction of aeroplanes in this country, seeing that our aerial defences at home had been for some time totally inadequate. He suggested that a Parliamentary Committee should be at once formed to meet representatives of aeroplane factories with a view to taking immediate steps to increase the output of aeroplanes, and that a large standing fleet of aeroplanes should be kept for home defence and for use for reprisals on German towns, the latter to be undertaken in force and by thoroughly up-to-date machines.

The Marquis of Crewe said he would like to speak as Chairman of the London County Council, which, while it had no responsibility for the protection of London against air raids, had the control and management of the Fire Brigade so seriously taxed, and liable to be seriously overtaxed, by outbreaks of fire from raids. The Council, again, had the control of schools, liable to attack and destruction, and upon which some terrible outrages had already been perpetrated during these raids. Everybody in London agreed that preference must be given to the Army in the provision of aircraft. The demands of the Commander-in-Chief for sufficient machines to enable him to dominate the situation at the Front must be met, and it must not be forgotten that the Germans were making greater efforts of late. But if any impression was allowed to get about, or was in the smallest degree encouraged, that because people had shown courage here their sufferings and misfortunes were regarded as of somewhat minor importance to those in France, then he thought serious unrest, with far-reaching consequences, might be caused in London, with ultimate consequences to the war which they would deplore.

It was possible that the degree of courage and self-control which had been displayed might have slightly misled people into thinking that the situation was taken with greater equanimity than was the case. It would be a mistake to suppose that the calmness and courage of demeanour did not cover a great deal of very real resentment. He was by no means sure that the holding of a private session in the House of Commons had not added, and would not add, to the resentment. There was a certain feeling that the reason for holding a sitting of that kind in private was not so much the fear of the disclosure of

figures which ought not to be made public as the keeping secret of something which the Government, for their own reasons, did not desire to be made public. He wanted to press on Lord Derby the importance and the necessity of reassuring the public.

The Earl of Derby entirely agreed with Lord Crewe as to the amount of courage shown by the London public. He was absolutely with him also in thinking it would be wrong if they allowed that courage to be used as an excuse for failing to provide, as far as they possibly could, air protection for the inhabitants of London. He agreed that the claims of France must come first. But they were a little apt to forget that it was not only the claims of France. There were other theatres of war all calling for more aeroplanes, for increased power aeroplanes—Mesopotamia, Egypt and Salonica. The relative value to be given to these different demands and to the demands for the defence of this country gave rise to the most anxious thought, but he could assure Lord Crewe that every consideration would be given to the defence of this country, bearing in mind the other demands. The best way in which they could give protection was by doing everything they possibly could to increase the output of aeroplanes. Lord Cowdray was sitting beside him, but it would not be right for him to give figures as to the increase in aeroplanes. He could assure the House that they showed a stupendous increase—an increase going on week by week and month by month, to such an extent as to tax to the utmost their training of pilots and the provision of aerodromes. Everything possible was being done to increase the output, and in this increase must rest our ultimate safety both here and on the various fronts.

He hoped what he had said would give some sense of security to London, but it would be idle for him to pretend that raids on this country could be entirely frustrated and eliminated from the enemy's operations. He hoped, however, that what was being done would make those raids so costly to the enemy in the future as to make it not worth while for him to continue this particularly barbarous form of warfare. Lord Tenterden's speech was merely a diatribe against the Air Board because his particular firm had not been given all it asked for. It was utterly untrue that the Government were hampering the output of aeroplanes because they would not spend the money. He hoped they would be able to show in the future that what could be done was being done.

## **HOUSE OF COMMONS.**

### **Enemy Air Raids.**

MR. BILLING, on July 11th, asked the Under-Secretary of State for War whether an enquiry has been held into the incidents which occurred at the Hendon Aerodrome of the R.F.C. preceding and during the enemy air raid over London on Saturday last; and, if so, what is the result of that enquiry?

MR. MACPHERSON: No enquiry has been held at the Hendon Aerodrome on any incident which occurred at the times mentioned.

MR. BILLING: Will the hon. gentleman take steps to have an enquiry regarding the incidents that happened at the Hendon Aerodrome on Saturday last?

SIR H. DALZIEL: I should like to ask also whether it is the case that the few machines that went up were machines that were waiting there to be tested, and were in such condition that some had immediately to come down?

MR. MACPHERSON: I think my right hon. friend might give me notice of a question like that.

SIR H. DALZIEL: Has not my hon. friend informed himself in such a case as this? It is the talk of London at this moment.

MR. MACPHERSON: My right hon. friend had the opportunity of raising that specific point in the debate.

MR. LYNCH asked the Prime Minister whether, in view of the failure to protect London from a small force of German aeroplanes appearing in daylight, and in view also of the possibility of the repetition on various scales of such raids as we have seen, he will proceed without delay to effect necessary changes in the higher direction of London's air defences?

MR. MACPHERSON: The answer is in the negative.

MR. LYNCH: Does the Government think it is running a war or a hugger-mugger political machine?

MR. BILLING asked the Prime Minister whether the official reports of casualties sustained in air raids include those sustained by naval and military men and civil servants?

MR. MACPHERSON: The answer to this question is in the affirmative.

MR. BILLING: Why should not the deaths of civilians and non-combatants be reported?

MR. MACPHERSON: My information is that they are reported.

MR. BILLING: Are we to understand that naval and military deaths are also reported?

MR. MACPHERSON: I have said so.

MR. HOGGE: Can my hon. friend explain, then, why it is that the public have been informed only this morning, for the first time, through the medium of a Coroner's inquest, that one of our airmen was shot down by the Germans on Saturday?

MR. MACPHERSON: That surely does not arise out of this question.

MR. BILLING: Are we to understand that every naval and military death that has occurred in an air raid has been duly included in Lord French's report?

MR. MACPHERSON: Yes.

SIR H. DALZIEL: Can my hon. friend say how many casualties there were among the airmen?

MR. MACPHERSON: I cannot say off hand. I think notice has been given in the public Press.

MR. BILLING: Were any Canadian soldiers included in the report on the Folkestone raid?

MR. MACPHERSON: Yes.

MR. BILLING asked the Prime Minister whether, having regard to the diametrically opposed results of our anti-aircraft fire from those anticipated whereby the German airmen were unscathed and our civilian population suffered, steps will be taken to provide more efficient anti-aircraft batteries both as regards guns and gun crews, or protect the people of this country by removing the guns altogether?

MR. MACPHERSON: The results of our anti-aircraft fire were not different from those anticipated.

The shooting of the London guns was observed from the ground to be good, and this is confirmed by our pilots in the air in the vicinity.

The action of anti-aircraft guns is necessarily restricted when our airmen are actually engaging the enemy, as they were on several occasions during their flight over London. The guns provided for the anti-aircraft defence of London are of the latest type, and the training of the gunners is efficiently conducted.

Casualties from our anti-aircraft shells are inevitable if the public do not at once take cover when they hear our guns, but the casualties would certainly be much greater if the enemy were unhampered by the fire of our guns.

MR. BILLING: Will the hon. gentleman tell us how the public can take cover if they are not warned?

General Croft: Is it not a fact that it cannot be hoped, with the present anti-aircraft guns, either in England or in France, to bring down many enemy machines, and that the best we can hope is, with luck, to keep the enemy machines high?

MR. FRANCE: Will the hon. gentleman say if the Government would undertake to lend the hon. member for East Herts (Mr. Billing) a machine, so that he can observe the gunfire from the air?

MR. MACMASTER: Can the hon. gentleman say, so far as he is able, how many of the casualties ought to be attributed to enemy activity and how many to our own guns?

MR. MACPHERSON: It is quite impossible for me to answer that accurately. Sir H. Dalziel: Is it the case that the shells are five years old?

Admiral of the Fleet Sir H. Meux: Is it the case that a new system of firing from our anti-aircraft guns has been brought into use within the last week or ten days?

MR. MACPHERSON: I am afraid I cannot answer that without notice. If my hon. and gallant friend will put down a question, I will see if I can answer it.

MR. BILLING: Will the hon. member give the request of the hon. member for Morley serious consideration and grant it if possible?

MR. BILLING asked the Prime Minister whether he can state the various districts throughout the Metropolis and the Eastern Counties visited or attacked on Saturday last by enemy airmen; and the numbers of killed and injured in each district?

MR. MACPHERSON: It is not possible to give this information, as it would be of use to the enemy. As regards the last part of the question, the totals have already been published.

MR. BILLING asked the Prime Minister whether he is now prepared to consider the advisability of introducing a system of warning London and other large cities of approaching air raids by employing coloured captive balloons with electric sirens attached; and, if so, whether he is prepared to consider a complete and detailed system worked out on these lines, and, if the same meets with his approval, that it shall be adopted?

The Secretary of State for the Home Department (Sir George Cave): My right hon. friend has asked me to reply to this question. The method by which warning of an actually impending air raid can best be given to the public is under consideration.

### **Anti-Aircraft Gunnery.**

SIR C. KINLOCH-COOKE, on July 12th, asked the Prime Minister whether, in view of the fact that efficient anti-aircraft defence is and will be an element of growing importance in the permanent defences of the country, adequate facilities have been given by the establishment of suitable experimental stations for working out the technical problems connected with anti-aircraft gunnery on lines similar to those by which the Navy was enabled before the war to solve with so high a measure of success the technical problems of long-range gunnery at moving targets at sea?

The Under-Secretary of State for War (Mr. Macpherson): At the School of Gunnery, Shoeburyness, there are full facilities for working out all the technical problems connected with anti-aircraft gunnery. The subject is also dealt with in the Munitions and Design Departments of the Ministry of Munitions.

### **Warnings.**

MR. GILBERT asked the Home Secretary if the Government has come to any decision as regards giving warnings to London in the case of enemy air raids; if so, can he state what method they propose to adopt; and in what manner will their instructions be issued to the public?

SIR G. CAVE: The Government have decided forthwith to set up machinery for obtaining (so far as possible) reliable information as to any enemy aircraft which may be actually approaching London, with a view to giving public warning of their approach. For this purpose, it will be necessary to establish a wide circle of observation posts and to provide rapid telephonic communication with a central office from which the directions for a public warning will be issued; and arrangements for these purposes are now being made. The method by which warnings can best be given to the public is under consideration. As soon as the arrangements are completed a public announcement will be made.

MR. FRANCE: In the proposed system does the right hon. gentleman include warnings to large works other than munition works containing a number of female workers who are anxious to have actual warning of the approach of aircraft?

SIR G. CAVE: This refers only to public warnings.

MR. HOGGE: Can the right hon. gentleman say whether he knows that aircraft were approaching London this morning, and if anybody had any warning?

SIR G. CAVE: No, sir, I did not know that.

SIR C. KINLOCH-COOKE: Can the right hon. gentleman say whether telephonic communication will be at once cut off directly these warnings are given?

SIR G. CAVE: Special facilities will be given for telephone messages which are



intended for the purpose of giving information and assistance. Subject to that the ordinary practice will go on.

Mr. J. Mason: Will the right hon. gentleman see that hospitals get at least as good warning as Government Departments?

Sir G. Cave: I believe that the General Headquarters, Home Forces, do endeavour to obtain that result.

#### British Pilots and July 7th Raid.

Mr. GEORGE FABER asked the Parliamentary Representative of the Air Board if he can state whether any British aeroplanes were lost or damaged in the German air raid on this country of July 7th inst.?

Mr. Macpherson: I am afraid that it would not be in the national interest to make any information public on this point, but I will inform my hon. friend privately.

Mr. Faber: While accepting the answer of the hon. gentleman, is it a fact that on July 7th, when certain of our aeroplanes tried to rise from Hendon Aerodrome, it was discovered that their engines had been tampered with?

Mr. Macpherson: I am afraid that I cannot answer that question.

Mr. Hogge: Is the hon. gentleman prepared to repeat his statement of yesterday that the War Office are not prepared to make any enquiry as to what took place at Hendon?

Mr. Macpherson: I never made any such statement. Whenever any necessity for an enquiry arises there will always be an enquiry.

Mr. Faber: Is an enquiry being instituted, or will there be?

Sir H. Dalziel: How many of our machines were brought down by our own guns?

Mr. Hogge: I will raise this point on the adjournment to-night. Last night there was no adjournment.

#### Retaliation.

Mr. Peto asked the Prime Minister—(1) whether, subject to expert opinion, a definite act of retaliation will be undertaken as soon as the resources of the Air Service admit of its execution without weakening our Air Service on the Western Front; and (2) whether, in deciding for or against a policy of retaliation for German air attacks on London, the Government will be guided only by military considerations, and not by sentimental, philosophical or ethical considerations?

Mr. Bonar Law: In this matter the Government will be guided solely by military considerations.

#### Bomb-proof Dug-outs (London).

Mr. CHANCELLOR asked the Under-Secretary of State for War whether he will use some of the forces in London in the course of their training to construct at convenient spots in the most frequented parks and open spaces bomb-proof dug-outs in which the public could take shelter during air raids?

Mr. Macpherson: My hon. friend's suggestion is receiving consideration, but the construction of sufficient dug-outs to benefit the population of London to any material extent is obviously a very large undertaking which requires careful examination.

#### Unsuccessful Air-raid Attempts.

CAPT. BARNETT asked the Under-Secretary of State for War whether, in the interest of public confidence, he will take steps to ensure that official information of unsuccessful attempts by hostile aircraft to cross the English coast shall be promptly published?

Mr. Macpherson: Should the occasion arise, the information asked for will be made public.

#### Fatal Accident (Yorkshire).

Mr. OUTERWAITE asked the Under-Secretary of State for War whether his attention has been called to the inquest held in Yorkshire on 2nd Lieut. Jesson Victor, R.F.C., and to the action of the military witnesses who stated that a special accidents committee was coming from London to investigate the cause of the accident, and who informed the father of the deceased that he could not be present at this enquiry as it would be a purely military one; and, in view of the fact that a jurymen stated that the jury were quite in the dark as to the cause of the accident, will he state why action was taken to prevent public enquiry into the death of an airman who had been flying two years in France and whose machine was stated in evidence to have broken in the air?

Mr. Macpherson: The object of the Accidents Committee is to enquire into accidents, both fatal and otherwise, of which the cause is technically obscure. The enquiry is purely technical, and the presence of relatives would serve no purpose.

#### July 7th Raid.

Mr. HOGGE (upon the proposal for adjournment): I want to raise a question, of which I gave the Under-Secretary of State for War notice at Question time to-day, concerned with the raid over London last Saturday. There are certain facts concerned with that raid which have not yet been explained to the House, and I am quite sure my hon. friend will welcome the opportunity of giving further information with regard to it if he can. The first point I want to raise is the question of how far the official communiqué of that raid is an accurate account of the proceedings. We were told, for example, that there were 20 German machines which visited London on that occasion. I should like my hon. friend to explain this to the House: Were the 20 machines which the War Office say visited London bombing machines, or did they include all the other machines which accompanied those on that visit? The reason I put that is a very simple one. I am not the only member of this House, and I am not the only member of the public, who counted a great many more machines. I myself counted 26 machines in one of the two flights which were over London, and I could produce substantial evidence of the fact that in that particular flight there were 26 machines. I want the Under-Secretary to explain whether in the number of 20 which the War Office gave they included all the protecting machines that usually accompany bombing machines on a raid of that kind. Then, secondly, I want my hon. friend to explain how it was that it was not until yesterday, through the evidence of a coroner's inquest being published in the Press, that we were made aware of a supreme act of courage on the part of a British airman. I do not know how many British airmen went up to meet the German flight, but, at any rate, as the result of this evidence which has now been made public, we do know that one of our airmen fought one of these German flights, and that he discharged at least 46 or 50 cartridges from his ammunition belt on the Germans before he was shot down. I think all of us recognise the supreme courage of our own airmen throughout this war, and I think all of us recognise the supreme courage of that young airman, whoever he was, who was killed in his gallant attempt to oppose that flight. I do think, if for no other reason—and I will give our reason presently—we ought to have heard from the War Office that, at any rate, we had some British airmen up who displayed the usual pluck and courage that we associate with that arm of the service. I do not think that the British public ought to be left to read the account of a Coroner's inquest to learn of an act of courage of that kind. The third point I would put is this. I want to know why it was—if it can be stated, and I think it ought to be stated—that there were no British aeroplanes in any number ready to oppose that German flight. I would like to ask my hon. friend if he can explain the absence from this country of some of the finest pilots, who ought to have been defending London; if there was any special reason why these machines were sent to the other side of the Channel; if those machines have since been brought back; and whether the objects for which they were taken there have ceased to exist, and that there remains no

other reason for their being there? I want to ask him, with regard to certain rumours which are prevalent. While none of us may place any great reliance upon rumours—they are unsettling—you cannot hide, and my hon. friend knows that the War Office cannot hide, certain arrangements which obtain in London, and it is a well-known and demonstrable fact that at one of the aerodromes in London a certain number of British machines did try to rise and attack the German flight, and that they were unable to pursue the object on which they set out because of certain defects in the machines. Somebody this afternoon, suggested that they had been tampered with. I am not suggesting that, because I can quite conceive an inability to start machines without their having been tampered with; but my hon. friend, in his reply, said that the War Office did not propose to make any kind of enquiry, and that reply rather disturbed one's mind.

The Under-Secretary of State for War (Mr. Macpherson): I did not say so. Mr. Hogge: The hon. gentleman says he did not say so. Then he will be able to make it quite plain, in his reply, that he did not mean what I thought. I rather gathered, from his reply, that he was not prepared to make that kind of enquiry. I suggest that the Government, as well as the House of Commons, wishes to take the whole British public with them as far as they can in this war. There is a certain amount of panic and unrest amongst the people, particularly in the City of London, at the present time, and when it is reported in the papers that the War Office is not taking the precautions that they should do, and are attempting to evade direct questions that are put, and are seeking refuge too frequently in the reply that it is not in the public interest, I do not think that they are doing themselves a service.

I, therefore, should be glad if to-night, in the short time that remains to us, he could deal with these points. Firstly, as to the real number of aeroplanes that came across; secondly, as to the practice of the War Office in notifying the casualties among our own airmen, and whether this, which was revealed to us by a Coroner's inquest was the only casualty among them, or whether it is true, as has been asserted in other quarters, that other British airmen were brought down. Thirdly, whether he can assure the House that the air squadrons which were taken from this country for a very special purpose—which I need not disclose, but which everybody knows—have now been returned. Whether, in the fourth place, my hon. friend does intend, on his own initiative, to satisfy himself that in the London area, in our aerodromes and in our gun stations, war conditions obtain all the time. Whether, at these stations and aerodromes, men are actually present all the time, ready to take the air or to fire a gun at a moment's notice; whether he will personally satisfy himself that that is so, and will assure the House that he can allay a perfectly reasonable suspicion in the minds of the people that all is not as well as it might be.

Mr. Macpherson: I should like to deal, if I may, with the last point of my hon. friend the member for East Edinburgh. He said that at Question time I made a definite statement that no enquiry was made into some accident or incidents which had occurred at a certain aerodrome. If my memory serves me right I never made any such assertion, what I did say was, it was not the practice in accidents of this sort for enquiry to be made. I do not know what my hon. friend has in his mind about this certain accident at a certain aerodrome, but all I can say is this, that if he can produce any specific case of any accident affecting the Air Service which ought to be enquired into, and in which no enquiry was made, then I will do my level best to see that such enquiry is made.

Mr. Hogge: I will put my hon. friend on the track.

Mr. Macpherson: Certainly. But what I object to, and I think the House will agree, is that all sorts of insinuations should be made, not by direct questions to the Minister in charge or Minister responsible, but that the case should be made by insinuations in supplementaries, when obviously the Minister, if he is wise, ought not to reply, and I think the House will agree that any insinuations against the Air Department or any Department should not be made by means of Supplementary Questions. My hon. friend knows perfectly well that insinuations were made to-day in a Supplementary.

Mr. Hogge: Not by me!

Mr. Macpherson: It does not matter by whom it was made. My hon. friend, if he did not make it, was cognisant of it, because he makes it now without any facts, and without making the necessary enquiries I am unable to answer.

Mr. Hogge: What I said was that the suggestion was made this afternoon, and that I expressly dissociated myself with it and did not allege it in my speech. I have information which I am prepared to hand to my hon. friend and tell him the exact source from which it came; that at a certain aerodrome certain air machines had gone up and had to come down again because of engine trouble, and all I ask is that he, as Under-Secretary, should satisfy himself that everything is as right as it should be.

Mr. Macpherson: I think my hon. friend is adopting a much more reasonable attitude now. My impression was that he repeated the assertion which was made at Question time this afternoon. If he asks me to make enquiries into the truth of the story which is being circulated, much to the detriment not only of this individual aerodrome, but to the whole of the Air Service, it is a different story, and I am prepared to do it. With regard to the third point, I am taking his points not in the order in which he first made them, but in the order in which they were last made.

With regard to the third point, the hon. member asks me whether it is a fact that during the recent air raid there was an absence of some of the defence squadrons in this country for a particular purpose at the Front. I think I may say that is true. As my hon. friend knows very well, at any given moment certain squadrons may go to the Front from this country, and this is a question of policy which I have elaborated at very great length on more than one occasion. Whether any squadron may have gone for any specific purpose may be true, but if my hon. friend makes the suggestion that a certain squadron was taken away from the defence of London for that purpose, I think he is going too far. At certain times squadrons may be taken away from the defence of this country to take part in an offensive capacity at the Front. With regard to the second question, he asks me whether the War Office were accurate in stating the list of casualties which actually took place.

Mr. Hogge: I was quite willing to accept what my hon. friend said the other day on his word that the casualties included this airman. What I am putting is this—what reason was there for a change in the practice, and leaving the public to find out through a Coroner's inquest that one of our gallant airmen met his death in this raid?

Mr. Macpherson: The War Office does not intend to be inaccurate when it announces to the world the number of casualties which have taken place either in London or any other place over which the air raiders went. I assert that the casualties given were accurate and did include not only the gallant airmen who lost their lives, the gallant naval airmen and Civil servants, but also the general public. My hon. friend seems to be making a large point of a very small fact. I am sure the House will be ready to join in an expression of regret to the relatives of this very gallant airman for whose death an inquest was held. An inquest is the inevitable consequence of any death by the law of England. When anybody is found dead, whether he be a Civil servant, a Naval airman or a member of the R.F.C., it is necessary by law that an inquest should be held. An inquest in this land is held immediately, for definite purposes, upon the body of any man. It does not follow that if the public become apprised of the death of some single individual by the adventitious aid of the law of England that that precludes a grateful country from acknowledging in proper



form its appreciation of the gallant manner in which an airman met his death. The first point was whether I could state the number of air raiders that passed over this country. I cannot add anything to the statement which was made by my right hon. friend the Home Secretary or the Chancellor of the Exchequer. The information which I have does not in any way disagree with the information which my right hon. friends gave to the House. I do not know upon what evidence or information my hon. friend relies.

Mr. Hogge: I saw it with my own eyes.

Mr. Macpherson: I do not know how he differentiates between a British and a German aeroplane at a height of 10,000 ft.

Mr. Hogge: It is quite easy if you have powerful glasses.

Mr. Macpherson: It is impossible for anybody who is not skilled in that particular branch to distinguish even with glasses whether an aeroplane 10,000 ft. high is an English or a German aeroplane.

Mr. Hogge: How did you make your calculation?

Mr. Speaker: This is a very interesting conversation, but I think that it would be much better to allow the hon. gentleman to make his reply.

Mr. Macpherson: I did not make any calculation. I am content to rely upon the calculations made by very distinguished experts in this branch of the Service, and the information which has already been given twice by my right hon. friend is the only information which I can give to the House at the present moment. The aerial defence of London is at this moment engaging the serious attention of the War Cabinet, and I am happy to say that my right hon. friend the Prime Minister and General Smuts are both personally looking into the position. I think that this will reassure all my hon. friends in this House.

Mr. T. Wilson: Personally I deprecate the introduction into our discussions of anything which will in any way lead our enemies to suppose that there is any division of opinion with regard to what should be done in connection with the air raids. The Under-Secretary seems to think that if an expert says that an aeroplane is 5,000 or 10,000 or 15,000 ft. high, it must be right and must not be questioned in any shape or form. I have information from a man who took an active part in the air raid, and I would rather take the experience of practical men than the opinion of experts who did not see the aeroplanes at all. I have been informed in letters and interviews that at least in two instances men who were prepared to attack the German aeroplanes, and who, in fact, ascended with that object, have been degraded because they did so without the consent of their commanding officers. If commanding officers do not realise the seriousness of the position, and that men who recognise that one of the best means of meeting the attacks of German aeroplanes is to put them out of action ought not to be degraded because they take action—

Mr. Macpherson: I should like to ask my hon. friend to tell me most specifically when this has been done, because I cannot allow a statement of that sort to be made in public without further particulars.

Mr. Wilson: That is one of the ways of the War Office in getting out of very difficult questions. I have information in connection with the air raids, and also in connection with other matters controlled by the military authorities which, if the newspapers were open, could be made public.

Mr. Macpherson: Will my hon. friend give me the information as to the War Office degrading R.F.C. officers because they have done what they thought was their duty?

Mr. Wilson: My information is that the pilot of an aeroplane ascended, and did attack a German aeroplane, and because he did this without the consent of his commanding officer he has been degraded.

Mr. Macpherson: Will my hon. friend give me the particulars of that case?

Mr. Wilson: I will get written information. I have had this verbally from the person concerned. But there is something more. I am only giving this for what it is worth. I am told that because a man had not passed his medical examination as an air mechanic or pilot, he also has been censured or degraded for taking a certain part in attempting to bring down a German aeroplane. It is very easy for the hon. gentleman to say, "Give me positive information." I am telling him what I have been told. It may be true or it may not, but during the last two years the hon. gentleman and his predecessors have had information with regard to the interference of superior officers in connection with the action of an inferior officer. If the hon. gentleman will give me access to the pigeon-holes of the War Office I shall be able to enlighten him. If he will not accept my word, let him refer to the pigeon-holes at the War Office and he will find what I have said to be absolutely correct. I object to any member of the Government attempting to minimise the importance of certain information which is conveyed to them and saying, "Unless you can prove this on oath in a Court of law, we will not accept your information." That is absolutely wrong. Subordinate officers in the Air Service are extremely afraid that if they come forward and tell what they can tell, they will be punished by a court-martial or by the War Office. It is most unfair to these men, who are doing their utmost to protect the country.

## Anti-Aircraft Guns.

Mr. LYNCH, on July 13th, asked whether the anti-aircraft guns of London can record a single hit to justify their existence; and whether radical changes will be made in the system of the guns themselves and in the higher command responsible for their service?

Mr. Macpherson: The answer to the first part of the question is in the affirmative. The anti-aircraft defences of the United Kingdom are constantly being improved, but it is not in the public interest to state the manner in which this is being done. The answer to the third part of the question is in the negative.

Mr. Lynch: The question was not about anti-aircraft guns in the United Kingdom, but about the anti-aircraft guns of London, and whether they have a single hit to their credit.

Mr. Speaker: The hon. member has had an answer to that.

General Sir Ivor Philipps: Is it not a fact that there is no sign from the ground that the anti-aircraft batteries are hitting the planes, and that very often a plane will be very heavily hit and not brought down, therefore is it fair to judge the action of the anti-aircraft batteries by the results that the public see from the ground?

Mr. Macpherson: Not at all.

Mr. Pemberton Billing: If the aircraft is not brought down, how is it possible to prove that a hit was registered? Is it not a fact that the hit registered was not on an enemy machine, but on one of our own?

Col. Lord Henry Cavendish-Bentinck: Go up and see for yourself.

## Insurance Premiums.

Mr. BILLING asked the Prime Minister whether his attention has been called to the fact that since the raid on Saturday last the insurance companies have doubled their rate of premiums for insurance against personal damage sustained in air raids; whether he is aware that this increase is attributable more to the operations of our anti-aircraft guns than to the enemy's bombs; and if he will now make a definite statement as to the liability for compensation for personal damage which the Government are prepared to accept and the exact conditions governing the same?

The Chancellor of the Exchequer (Mr. Bonar Law): I have nothing to add to the reply which I gave on this subject to the hon. member for East Edinburgh on June 28th last.

Mr. Billing: Are citizens who are killed by our own anti-aircraft guns entitled to compensation from the Government, and if so, what procedure are they to adopt to obtain it?

Mr. Bonar Law: Perhaps the hon. member will read the reply to which I have referred him.

Mr. Billing: I have read it, and it conveys nothing to me nor to the people who are anxious to get compensation.

Col. Burn: Is my right hon. friend aware that the insurance companies are offering very reduced premiums? I received a letter this morning saying the terms are so reduced that I might possibly like to insure against air raids.

## Cadet Squadrons.

Mr. BILLING asked the Under-Secretary of State for War whether, in view of the necessity for increasing both the number and technical and mechanical knowledge of our pilots, he will favourably consider any application from men between the age of 18 and 25 serving either at home or abroad for immediate enrolment in special cadet squadrons, thus enabling them to have a sound course of engineering instruction pending facilities for flying tuition?

Mr. Macpherson: Special cadet squadrons of this kind were instituted some time ago, and there is a large number of pupils under instruction.

Mr. Billing: Will the hon. gentleman answer my question, which was whether he is prepared to favourably consider applications from men from 18 to 25 in order to increase the reserve of pilots?

Mr. Macpherson: No doubt any application made by a suitable person would be considered at once by the proper department.

Mr. Billing: Will you issue an order that both in France and in England that these applications are requested?

Mr. Macpherson: I will consult my military advisers about that. I can assure my hon. friend that we have a very large number of very suitable pupils undergoing instruction at the present time.

Commander Wedgwood: Is the hon. gentleman aware that there are certain branches of the Army or certain officers at the Front who will not allow their men to go into the R.F.C., and will steps be taken, for instance, to see that officers of the Army Service Corps permit their men to go into the R.F.C.?

Mr. Macpherson: I will bring that point before my noble friend.

## Royal Flying Corps.

Mr. BILLING asked whether it is the practice in the R.F.C. in the event of friction arising either from service or social reasons between pilots and their commanding officers, to force these pilots against their will to apply to be invalided out of the service or transferred to another branch; and, if this is so, how many cases of the kind have occurred during the last twelve months?

Mr. Macpherson: The answer is in the negative.

Mr. Billing: Will the hon. gentleman consider the setting up of a Court of Enquiry or some court of appeal in cases in which men are turned out of the Corps? There are many dozens of them turned out to my knowledge. Will he see that they have some form of appeal?

Mr. Macpherson: I cannot promise that.

## Training of Non-Commissioned Officers.

Mr. BILLING asked the Under-Secretary of State for War whether, in view of our shortage of pilots, he will encourage the training of N.C.O.s. and men in the R.F.C. as pilots at least for the emergency service and for home defence?

Mr. Macpherson: N.C.O.s. and men of the R.F.C. are selected for training as pilots. Frequently when selected they are granted commissions.

## Administration.

Mr. BILLING asked the Prime Minister whether he will appoint a Commission to enquire into and report upon the administration of the Air Service during the past twelve months; and, if so, whether he will arrange that the Commission should include, as to half its number, representatives of recognised aeronautical instructors in this country, thus enabling the Commission to appreciate and understand the evidence submitted and prepare a just and impartial report?

Mr. Bonar Law: The answer is in the negative.

Mr. Billing: Has the right hon. gentleman had any occasion to read the transcript of the notes of the evidence before the previous air enquiry and compare it with the incident which happened on Saturday?

Mr. Bonar Law: I read very carefully the report of that enquiry, and I am surprised that the hon. member wishes another.

Mr. Billing: Is the right hon. gentleman aware that I shall continue to wish for enquiries until reform has taken place?

## Day-Flying Machines.

MAJOR NEWMAN, on July 16th, asked the Parliamentary Representative of the Air Board whether only one airman was available to take part in resisting the recent air raid at a certain aerodrome; and, if so, will he give the reasons that made it necessary to denude this station of its effective personnel?

The Under-Secretary of State for War (Mr. Macpherson): Of the three day-flying machines at the aerodrome which my hon. and gallant friend has in mind, two went up. The other machines at this station are night-flying aeroplanes.

Mr. Billing: Can the hon. gentleman say whether a complete change has been made since the last air raid in the defences of this country? Has it been re-organised?

Mr. Macpherson: I cannot say that a complete change has been made, but I can assure my hon. friend that everything possible has been done to make the system of defence as perfect as possible.

## Defence of London.

Mr. BILLING asked the Home Secretary whether he will give information as to the system it is proposed to adopt to warn London of pending air raids; and whether, in the event of fire stations being employed, he will see that this allocation of extra work to the firemen in no way interferes with their being available for duty at fires which may originate owing to enemy raids?

Sir G. Cave: Considerable progress has been made in this matter. What is required is, first, that we should have reliable information when enemy aircraft are actually approaching London, and secondly, that we should have efficient means of warning the public of their approach. As to the first point, the military authorities have promised their co-operation, and machinery for obtaining the necessary information is therefore now available and will, I understand, be improved. As to the second point, certain sirens have been tested and others will be tried to-morrow. The local authorities have been asked to suggest sites for the sirens and otherwise to assist in the arrangements for the public warning. As soon as these arrangements are completed, a public announcement will be made describing the system adopted and containing instructions for securing the public safety in the event of a raid. In the meantime the Commissioner of Police has made certain temporary arrangements, notice of which has been issued. Nothing will be done to interfere with the proper work of the fire brigade.

Mr. Billing: Can the right hon. gentleman say whether the warning on Saturday was purely a rehearsal or a genuine air raid warning, seeing that the warning was given at twenty-seven minutes past seven and the "all clear" warning one minute later?

Sir G. Cave: No public warning should have been issued on Saturday. The usual preliminary notice of a possible air raid was received and circulated through the police stations as usual. At a few of the stations the officer in charge misunderstood his instructions, and, instead of waiting for the second or "take cover" warning, allowed the police at once to go out with the warning. There was no question of any rehearsal.

## The Machines.

Mr. BROOKES asked what percentage of the latest pattern aeroplanes are utilised among those machines employed in the defence of London?

Mr. Macpherson: Excluding night flying machines, 59 per cent. of the aero-



planes in possession of those home defence squadrons which can take part in the defence of London are first-class fighting machines.

#### The Anti-Aircraft Artillery.

Mr. BROOKES asked whether the anti-aircraft artillery employed in the defence of London is of the latest pattern; whether any of the gunners have had experience at the Front; and how many opportunities really exist for effective practice in this country?

Mr. Macpherson: The reply to the first part of the question is in the affirmative. As the personnel are mainly home service men, they have had practically no experience at the Front. All detachments have periodical practice firing.

Mr. Billing: Will the hon. gentleman consider the advisability of drafting some of these gunners across for a few weeks' experience at the Front and then bringing them back again?

#### Air Board.

Mr. LYNCH asked the Prime Minister whether the present Air Board will be abolished and an Air Ministry composed of new men be set up with the distinct object not only of supplying the needs of the Army and Navy, but of creating a separate striking arm capable of becoming a decisive factor in the war?

Mr. Bonar Law: The Government, as at present advised, are not prepared to adopt the proposal contained in this question.

Mr. Billing: Will the right hon. gentleman consider the appointment to the supreme command of the air defence of this country of one man who has both fighting and organising experience?

#### Compensation for Injuries.

Mr. BILLING asked the Prime Minister what Department any persons injured, or the relations of any persons killed, by enemy air raids over this country are to apply for compensation or pension; and what form is such application to take?

Mr. Bonar Law: Applications either for temporary or permanent assistance should be made to the local representative committees, which were instituted at the outbreak of war for the relief of distress caused by the war. Forms of application can be obtained at the offices of each committee.

Mr. Billing: Does that apply to all cases since the outbreak of the war whether the injury is from Zeppelins or aeroplanes?

Mr. Bonar Law: It applies to the cases stated in the answer, and it will be retrospective.

Mr. Hogge: It will be retrospective?

Mr. Bonar Law: Yes, retrospective.

#### Inspection Department.

Mr. MACVEAGH asked the Parliamentary Representative of the Air Board whether he can state the total monthly cost of the inspection department of the Air Board; how many inspectors are employed; what are the names and previous occupations of the inspectors; and how many of them had previous experience of engineering work?

Dr. Addison: The cost of inspection for the financial year 1916-17 was £83 per cent. of the value of the material inspected. The Inspection Directorate consists of one director, twenty-three inspectors and 104 assistant inspectors. In addition to this, there are lower ratings of chief examiners, assistant examiners and examiners. The previous occupations and experience of engineering work of the inspectors is carefully examined and recorded in every case.

#### Enemy Air Raid.

Mr. BILLING asked whether any officer of the R.F.C. has been suspended, or court-martialled, or is awaiting court-martial, for alleged faults of omission and commission in connection with the air raid of July 7th?

Mr. Macpherson: The answer is in the negative.

## AIRCRAFT WORK AT THE FRONT.

### OFFICIAL INFORMATION.

#### British.

General Headquarters, July 10th.

"Bad weather again prevented aerial operations on either side yesterday."

General Headquarters, July 11th.

"Bad weather yesterday prevented any aerial activity on either side until the evening. During the night we bombed two enemy aerodromes. All our machines returned safely."

War Office, July 11th.

"Salonica.—Our aeroplanes have bombed Drama, Porna and Angista, and various points on the enemy's line of communications in the Upper Struma Valley."

War Office, July 12th.

"Mesopotamia.—On July 10th two German airmen surrendered themselves to our troops at Samarra, stating that they had abandoned two machines, which were burnt in the desert, and that two other German airmen, who were unable to walk, had been left behind. British armoured cars were at once dispatched to search for the missing men, and if possible to bring them in."

"Egypt.—On July 3rd four small bombs were dropped on Port Said by a hostile aeroplane, and two persons were wounded."

General Headquarters, July 12th.

"There was great activity in the air yesterday. A large number of bombs were dropped during the night on enemy aerodromes and ammunition dumps, and during the day eight other successful raids were carried out by our aeroplanes. In the course of air fighting four German aeroplanes were brought down, and six other hostile machines were driven down out of control. Three of our machines are missing."

General Headquarters, July 13th.

"On the night of the 11th-12th inst. bombing operations against the enemy's railway stations, hutments and aerodromes were again carried out with success. All our machines returned. Yesterday there was unceasing aerial activity on both sides from dawn till late at night. The fighting, which resulted greatly in our favour, was the most severe that has been experienced since the commencement of the war. Continuous engagements took place between large formations, consisting in some cases of as many as 30 machines. As a result of these encounters 14 German aeroplanes were brought down, three of which fell within our lines, and 16 other hostile machines were driven down out of control. In addition one enemy machine was shot down by a direct hit from our anti-aircraft guns. While our scout machines were engaged in fighting, other British aeroplanes took many photographs; and the bombing of the enemy's aerodromes, dumps and railway stations was continued, large numbers of bombs being dropped with good results. Nine of our machines are missing."

General Headquarters, July 14th.

"Bombing operations by our aeroplanes were continued with success yesterday and during the preceding night. Fighting in the air took place throughout the day, in the course of which four hostile machines were brought down and 10 others were driven out of control. Another enemy aeroplane was shot down within our lines by our anti-aircraft guns. Seven of our machines are missing."

General Headquarters, July 15th.

"On the night of the 13th-14th four important railway stations behind the enemy's lines and a large German rest camp were bombed by our aeroplanes. Yesterday, in spite of heavy thunderstorms throughout the day, bombs were dropped on a hostile aerodrome and an enemy munition dump, and much valuable work was done in co-operation with our artillery. In air fighting three German machines were brought down and two others were driven down out of control. Five of our machines are missing."

General Headquarters, July 16th.

"Three German aeroplanes were brought down yesterday in air fighting. Three of our machines are missing."

#### French.

Paris, July 10th.

"Salonica.—British aeroplanes have bombarded Petric."

Paris, July 11th.

"Salonica.—An enemy aeroplane was obliged to descend near Livadi, south of Jumnica."

Paris, July 12th.

"Salonica.—British airmen bombarded the railway station at Angista, 17 miles east of Seres. There have been patrol encounters and artillery firing on the Vardar front. The German captain and pilot who were found in the enemy machine captured yesterday (July 10th) have been made prisoners."

Paris, July 13th.

"During the period from July 8th to 10th ten German aeroplanes were brought down on our front, including eight in aerial fights and two by the fire of our machine guns. Besides, eight enemy machines fell in their own lines in a badly damaged condition."

Paris, July 14th.

"During the night some German aeroplanes threw bombs throughout the region north of Nancy. Two women and a child were killed."

Paris, July 16th.

"Salonica.—An enemy aeroplane brought down by a British machine fell in flames near Angista."

Petrograd, July 11th.

"Baltic Sea.—On July 9th squadrons of enemy hydroplanes performed three flights over Arensburg and the region of Tserelia, dropping about 30 bombs on the roadsteads, the batteries and other structures, without result, and causing no loss or damage. On July 8th an enemy Zeppelin made a flight over the south-western extremity of the Aland Archipelago."

Petrograd, July 14th.

"A squadron of our aeroplanes made a flight over the railway station of Turnout (south of Dvinsk), and dropped bombs."

#### Italian.

Rome, July 11th.

"An enemy machine brought down in an air fight fell within its own lines between Ternizza and Uschizza (Vojscizza). On the Asiago Plateau numerous enemy reconnoitring aeroplanes were repulsed by our fire and machines. This morning enemy aeroplanes carried out a brutal bombarding raid on Cividale (Friuli) without being justified in so doing by any military reason. The only result was a few victims in the civil population and slight damage to some buildings."

Rome, July 14th.

"Aerial activity was considerable during the whole day. All our machines returned safely. An enemy machine was brought down in an air fight, and fell between Miramare and Trieste."

Rome, July 15th.

"There was considerable aerial activity in Carnia and on the first line of the Julian front. An enemy machine brought down in aerial combat fell in flames east of Kostanjevica."

Rome, July 16th.

"At dawn this morning one of our big bombarding air squadrons, accompanied by escorting aeroplanes, carried out a raid on the enemy's lines of communication east of Selo, where numerous troops were discovered and effectively bombed. Our machines, which flew very low in order to drop their bombs, have all returned safely, notwithstanding the enemy's anti-aircraft fire and hostile machines, one of which was brought down and the others driven back. This morning enemy seaplanes dropped bombs between the Isonzo and the Carso. There were a few victims, and slight damage was caused."

#### German.

Berlin, July 10th.

"The results of the engagements against the enemy aerial forces in the month of June were good. Our enemies have lost 220 aeroplanes and 33 captive balloons through the effect of our weapons. Our anti-aircraft guns shot down 60 enemy airmen, the remainder having been brought down in aerial fighting. Our losses amount to 68 aeroplanes and three captive balloons."

Berlin, July 11th.

"During the past few days our naval air squadrons successfully and repeatedly showered bombs on the North Courland coast, on the batteries, barracks and harbour works near Reval and Arensburg, and on the island of Oesel (north of the Gulf of Riga). Hits and fires lasting a long time were observed. In spite of the violent shooting of hostile batteries our aeroplanes returned safely from all their undertakings."

Berlin, July 13th.

"In the course of numerous aerial engagements the enemy lost 17 aeroplanes; two others were also brought down by anti-aircraft fire. 1st Lieut. Ritter von Tutschek, who on July 12th (?) brought down two enemy airmen, yesterday won his sixteenth aerial victory by shooting down a captive balloon."

Berlin, July 14th.

"Twenty-one enemy airmen and one captive balloon were brought down yesterday in aerial engagements and by means of defensive fire."

#### Bulgarian.

Sofia, July 10th.

"Near Petric two of our airmen, after a stern struggle with six aeroplanes, brought down a British machine piloted by Capt. Odvier (?), who was made a prisoner."

#### Turkish.

Constantinople, July 6th.

"Sinai Front.—On July 4th our airmen successfully bombed the railway station of Port Said."

Constantinople, July 10th.

"Last night two enemy aeroplanes flew over Constantinople and dropped bombs at some places, causing insignificant damage."

"Two British airmen were brought down on July 8th."





# The British Air Service



"PER ARDUA AD ASTRA"

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

## Royal Naval Air Service.

Admiralty, July 10th.

Temp. Sub-Lieut. (R.N.V.R.) J. A. F. Sinclair entered as Prob. Flight Officer (Temp.), seniority July 9th.

The following have been entered as Prob. Flight Officers (Temp.), seniority as stated: E. W. Hobbs, R. E. Budd, J. A. H. Chancellor, W. E. Clarke, V. F. R. Hill, R. A. Hodgson, J. S. Ingleby, C. N. T. Jellings, C. E. I. Jones, P. S. L. Lee, H. G. Owen, A. H. C. Randall, J. R. F. Randall, C. S. Reeve, G. M. Roberts, F. C. Sherwood, P. Smallwood, S. Smith, G. R. B. Smyth, F. C. Sumner, J. E. Tretman, C. H. Tucker, G. E. Tugwell and R. E. Walwin; July 1st. A. R. Gray; July 2nd. H. B. Archibald; July 17th.

Mr. L. Fell entered as Prob. Observer (Temp.), seniority July 14th.

Temporary commissions as Lieutenant (R.N.V.R.) have been granted to the following, seniority as under:—C. J. Proctor, July 6th; E. B. de Merrill, July 8th; M. D. M. Dando and C. J. Smith, July 9th.

London Gazette Supplement, July 10th.

Temporary Observer Sub-Lieutenant to be Temp. Observer-Lieutenant.—D. R. W. Thompson; April 2nd.

Admiralty, July 11th.

The following have been entered as Prob. Flight Officers (Temp.), seniority as under: F. Marriott; May 26th. J. C. C. Cotes, W. Hornblower and H. R. Moore; May 28th. A. M. Ross; May 29th. R. W. M. Andrew, R. S. Goddard and O. B. Howell; June 5th. G. Macfarlane and P. H. Cleave; June 11th. H. C. Reeves; June 13th. G. W. Joyce, F. T. Muncey, J. S. Hopper and A. M. Jackson; June 18th.

Admiralty, July 13th.

The following Prob. Ob. Officers (Temp.) have been promoted to Ob. Sub-Lieuts. (Temp.), seniority as under: A. E. Sole, F. H. Stringer and B. E. Harrison; May 16th. G. G. Speight and T. H. Piper; June 2nd.

E. L. Dougal entered as Prob. Flight Officer (Temp.), seniority July 10th. A temp. commission as Lieut. (R.N.V.R.) has been granted to E. H. Carmichael, seniority July 12th.

Admiralty, July 14th.

Flight-Comdr. J. Bird granted rank of Acting Sqdn.-Comdr., seniority July 11th.

Temp. Flight-Lieut. W. P. Groves granted rank of Acting Flight-Comdr. (Temp.), seniority July 11th.

## Royal Flying Corps (Military Wing).

London Gazette Supplement, July 10th.

The following appointments are made:—  
**Flight-Commanders.**—From Flying Officers, and to be Temp. Capts. whilst so employed: Temp. 2nd Lieut. P. F. Fullard, Gen. List; June 19th. 2nd Lieut. G. A. Lascelles, S.R.; June 24th.

**Flying Officers.**—2nd Lieut. (on prob.) L. M. Archibald, S.R.; June 16th. Temp. 2nd Lieut. (on prob.) L. G. Nixon, Gen. List; June 18th. Temp. 2nd Lieut. (on prob.) R. S. Park, Gen. List; June 19th. Temp. 2nd Lieut. (on prob.) S. V. Lewis, Gen. List; 2nd Lieut. (on prob.) W. G. Salmou, S.R.; June 20th. Temp. 2nd Lieut. (on prob.) A. Holmes, Gen. List; June 22nd.

**Flying Officers (Observers).**—2nd Lieut. (Temp. Lieut.) N. N. Cope, N. Lan. R. (T.F.), and to be sec'd.; June 1st, seniority Feb. 23rd. Lieut. V. W. Nutkins, R. Sc. Fus., seniority Mar. 5th, and to be sec'd.; Temp. Lieut. R. F. Berrill, R.A., seniority Mar. 16th, and to be transf'd. to the Gen. List, 2nd Lieut. H. Munro, Arg. and Suth'd. Highrs. (T.F.), seniority Mar. 27th, and to be sec'd.; June 19th. 2nd Lieut. A. W. Merohant, Lond. R. (T.F.), and to be sec'd.; 2nd Lieut. W. O'Toole, R. Ir. Fus., S.R., and to be sec'd.; June 19th, seniority April 2nd. Temp. 2nd Lieut. H. Owen, E. Kent R., and to be transf'd. to Gen. List; June 19th, seniority April 3rd. Lieut. H. P. Illsley, Can. Inf.; Lieut. J. H. Reid, Can. Inf.; June 1st, seniority April 6th. Lieut. F. J. B. Davies, Can. Pioneer Train Depôt; 2nd Lieut. C. N. Silvester, R.F.A., S.R.; June 1st, seniority April 22nd. Temp. 2nd Lieut. J. B. Pierce, Gen. List, from a Flying Officer; June 19th, seniority May 3rd.

**Park Commander.**—Lieut. (Temp. Capt.) F. A. G. Noel, S.R., from an Equipment Officer, 1st Cl., and to be Temp. Major whilst so employed; June 8th.

**Equipment Officers, 2nd Class.**—Temp. Lieut. J. H. Crutch, Gen. List, from a Flying Officer; June 18th. 2nd Lieut. R. N. Vyvan, S.R., from the 3rd Cl., and to be Temp. Lieut. whilst so employed; June 26th.

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) V. Andrew relinquishes his commission on account of physical unsuitability as a Pilot or Ob.; July 11th. Temp. 2nd Lieut. G. R. James, from Gen. List to be 2nd Lieut.; Mar. 17th.

**General List.**—A. J. Anderson, A. J. Bird, B. J. T. Bosanquet, A. S. Budge, A. L. J. Bulley, A. H. Dempster, H. Illingworth, E. Lee; June 9th. M. Morris; June 11th. P. K. Armstrong, V. G. Barry, S. H. Evans, A. G. Freeman, G. S. Rogers, M. E. Staples, B. Thomas; June 13th. H. S. Selves; June 23rd. I. McL. Black, A. C. G. Brown, S. Eidinow, W. Featherstone, J. C. Matthews, M. F. St. Clair-Fowles; June 25th. M. L. P. Reilly; June 26th. G. K. Trim; June 26th. H. S. Davie; June 27th. N. E. Gwyer; June 27th.

**Staff Officer, 3rd Class (graded for pay as a Staff Captain).**—Temp. 2nd Lieut. R. Addenbrooke-Prout, Gen. List, and to be Temp. Capt. whilst so employed; Mar. 11th.

**Flight-Commanders.**—From Flying Officers, and to be Temp. Capts. whilst so employed: Temp. Lieut. H. H. James, Gen. List; June 15th. Temp. Lieut. W. A. Bond, M.C., Yorks. L.I.; June 30th.

**Flying Officers.**—2nd Lieut. R. C. Sotham, R. W. Kent R. (T.F.), and to be sec'd.; May 18th. Temp. 2nd Lieut. W. H. Peirce, Gen. List; May 21st. Temp. 2nd Lieut. (on prob.) J. Collier, Gen. List, and to be confirmed in his rank; May 22nd. Temp. 2nd Lieut. J. K. Campbell, Gen. List, from a Flying Officer (Ob.); May 23rd, seniority Oct. 3rd. L. G. D. Jenkins, Hamps. R. (T.F.), and to be sec'd.; May 26th. Temp. 2nd Lieut. E. E. Owen, attd. R. Fus., and to be transf'd. to Gen. List; May 28th. 2nd Lieut. H. A. Churchward, Yeo. (T.F.), and to be sec'd.; May 31st; 2nd Lieut. D. G. Powell, S.W. Bord. (T.F.), and to be sec'd.; June 1st. Temp. Lieut. L. B. May, attd. R. W. Fus., and to be transf'd. to Gen. List; June 6th. Temp. Lieut. D. M. Paton, Gen. List; June 19th. 2nd Lieut. A. W. Gordon, S.R.; June 20th. Temp. 2nd Lieut. (on prob.) C. O. Rayner, Gen. List; June 21st. Temp. 2nd Lieut. (on prob.) R. F. Barnes, Gen. List; Temp. 2nd Lieut. (on prob.) E. J. Smetham-Jones, Gen. List; June 22nd. Temp. 2nd Lieut. (on prob.) G. Dodds, Gen. List, and to be confirmed in his rank; 2nd Lieut. E. S. Ward, Oxf. and Bucks L.I., and to be sec'd.; Temp. 2nd Lieut. (on prob.) H. J. Ellam, Gen. List, and to be confirmed in his rank; 2nd Lieut. (on prob.) E. S. Pitman, S.R.; Temp. 2nd Lieut. (on prob.) J. S. Chick, Gen. List, and to be confirmed

in his rank; June 25th. Lieut. (Temp. Capt.) J. W. Pain, Suff. R. (T.F.), from a Flying Officer (Ob.), seniority June 2nd, 1916; 2nd Lieut. H. B. New, Essex R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. (on prob.) P. H. Sadler, Gen. List, and to be confirmed in his rank; 2nd Lieut. P. W. Rutherford, M.C., W. York. R., from Temp. Lieut., Serv. Bn., and to be sec'd.; Temp. 2nd Lieut. (on prob.) W. Beaver, Gen. List, and to be confirmed in his rank; 2nd Lieut. (on prob.) P. Rawlinson, S.R. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: P. W. S. Bulman, E. Maden, J. D. Robinson, S. Walther; 2nd Lieut. (on prob.) S. F. Napper, S.R.; 2nd Lieut. (on prob.) A. E. Palfreyman, S.R.; Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: H. F. Jenkins; June 26th. N. J. Taylor; 2nd Lieut. (on prob.) W. Dee, S.R.; Temp. 2nd Lieut. (on prob.) H. C. Haydock, Gen. List, and to be confirmed in his rank; Temp. 2nd Lieut. (on prob.) J. H. R. Salter, Gen. List, and to be confirmed in his rank; Lieut. T. J. McInnis, Can. Gen. List; Temp. 2nd Lieut. M. N. F. Smith, attd. North'd. Fus., and to be transf'd. to Gen. List; 2nd Lieut. J. R. Bell, Dorset R., and to be sec'd.; 2nd Lieut. (on prob.) L. M. Hill, S.R.; Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: H. B. Pett, A. A. C. Hyde, P. D. Learoyd, L. W. Timmis, R. G. Hammersley, G. Clapham; June 27th. R. G. Davison, F. Hobson, Lieut. H. Spurr, Lond. R. (T.F.), and to be sec'd.; 2nd Lieut. (on prob.) S. J. Schooley, S.R.; June 28th.

**Park Commanders.**—From Equipment Officers, 1st Cl., and to be Temp. Majors whilst so employed: Lieut. (Temp. Capt.) R. K. Pillers, North n. R., S.R.; Lieut. (Temp. Capt.) C. Barber, S.R.; June 20th.

**Equipment Officers, 1st Class.**—Temp. Lieut. W. B. Cushion, Gen. List, from the 2nd Cl., and to be Temp. Capt. whilst so employed; July 2nd.

**2nd Class.**—Temp. 2nd Lieut. W. A. Andrews, Gen. List, from the 3rd Cl., and to be Temp. Lieut. whilst so employed; June 28th.

Air Compass Branch.

**Superintendent (graded as a Park Commander).**—Temp. 2nd Lieut. (Temp. Capt.) M. K. Cooper-King, Gen. List, from a Staff Capt. and to be Temp. Major whilst so employed; May 19th.

Schools of Instruction.—Armament School.

**Commandant (graded as a Park Commander).**—Lieut. (Temp. Capt.) A. C. Bishop, Yeo. (T.F.), from a Wing Instr. in Gunnery (graded as Equipment Officer, 1st Class), and to be Temp. Major whilst so employed; June 12th.

**Instructor (graded as an Equipment Officer, 1st Class).**—2nd Lieut. (Temp. Lieut.) J. Pearce, K.O. Sco. Bord., from an Equipment Officer, 2nd Cl., and to be Temp. Capt. whilst so employed; June 12th.

**Memoranda.**—2nd Lieuts. S.R., to be Temp. Lieuts. whilst serving with R.F.C.: E. L. Bishop, Worc. R.; H. A. Hallam, York. and Lanc. R.; I. R. Mayhew, Leic. R.; W. E. Kemp, R. Lanc. R.; G. H. Plowman, R. Innis-Fus.; J. C. Smith, R. War. R.; R. C. W. Morgan, S. Wales Bord.; E. R. Evans, Ches. R.; R. M. D. Fairweather, High. L.I.; W. E. Watt, K.E. Horse; K. Shelton, E. Kent R.; J. S. Smith, N. Staff. R.; F. Rose, E. York. R.; W. G. Albu, R. Ir. Fus.; E. T. Philp, R.F.A.; E. P. Fletcher, R.F.A.; J. H. Broadway, Dorset R.; B. R. Davis, R. Fus.; R. T. C. Hoidge, R.G.A.; R. A. James, Middx. R.; J. B. Henry, R. Innis-Fus.; H. H. Kilby, Lrs.; June 1st. Temp. 2nd Lieuts. to be Temp. Lieuts. whilst serving with R.F.C.: D. H. S. Gilbertson, W. G. Ryan, C. G. Moore, H. Jackson, J. A. Gerges, E. Rhodes, T. H. McArthur, S. I. Gribble, M.C., G. Stocks, W. H. Howes, G. S. Murray, G. H. Heys, H. P. Jenkinson, F. C. Butler, C. W. T. Riley, W. J. Rice, R. K. Kirkman, G. H. Creighton, J. Metcalfe, T. C. Noble, F. L. Osman, J. H. Mackie, W. H. Buckeridge, G. T. Richardson, G. C. Twining, J. S. Williams, M.C.; June 1st.

Temp. 2nd Lieut. A. R. Harris, Gen. List, relinquishes his commission on account of ill-health; Dec. 23rd (substituted for the notification in the Gazette of Dec. 22nd).

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) H. J. Air resigns his commission; July 17th.

**General List (R.F.C.).**—The appointment of J. B. Young to a temp. commission as 2nd Lieut., notified in the Gazette of June 20th, page 6,149, is cancelled.

London Gazette, Supplement, July 11th.

The following appointments are made:—

**Squadron Commanders.**—From Flight Comdrs., and to be Temp. Majors whilst so employed:—2nd Lieut. (Temp. Capt.) A. T. Watson, S.R.; Feb. 15th. Lieut. (Temp. Capt.) M. E. Lane, S.R.; March 29th. From Flight Comdrs.:—Major M. G. Lee, Ind. Inf., Capt. R. G. H. Murray, Ind. Inf., and to be Temp. Major whilst so employed; May 1st.

**Flight Commanders.**—Temp. Capt. J. O. C. Orton, Norf. R., from a Flying Officer; June 18th. From Flying Officers, and to be Temp. Capts. whilst so employed:—Temp. Lieut. J. B. Solomon, Oxf. and Bucks L.I.; June 20th. 2nd Lieut. (Temp. Lieut.) G. Leckie, R.G.A., S.R.; June 23rd. 2nd Lieut. E. A. McKay, S.R.; June 24th. Lieut. C. C. Durston, H.A.C. (T.F.); June 26th.

**Flying Officers.**—Temp. Capt. G. M. Smyth, N. Lan. R., and to be transf'd. to the Gen. List; May 27th. 2nd Lieut. S. P. Marcus, Yeo. (T.F.), and to be sec'd.; May 28th. Temp. Lieut. A. H. Parsons, N. Staff. R.; 2nd Lieut. H. A. V. Kirk, Leic. R. (T.F.), and to be sec'd.; June 1st. Temp. 2nd Lieut. J. H. Mitchell, Gen. List; June 5th. 2nd Lieut. (on prob.) L. Cummings, S.R.; June 13th. 2nd Lieut. E. F. Terry, Lond. R. (T.F.), and to be sec'd.; 2nd Lieut. C. E. Maitland, R.A., and to be sec'd.; Temp. 2nd Lieut. R. M. W. Loudon, Gen. List; June 14th. Temp. 2nd Lieut. K. Loughlin, Gen. List; Temp. 2nd Lieut. (on prob.) H. Hunter, Gen. List; Temp. 2nd Lieut. W. A. Stillwell, Gen. List; Temp. 2nd Lieut. (on prob.) J. J. A. Hawtree, Gen. List; June 15th. Temp. 2nd Lieut. (on prob.) N. H. Annet, Gen. List; Temp. 2nd Lieut. J. C. Huggard, Gen. List; Temp. 2nd Lieut. K. C. Mills, Gen. List; Temp. 2nd Lieut. (on prob.) J. W. Grose, Gen. List; June 17th. Temp. 2nd Lieut. H. A. Padley, Linc. R., and to be transf'd. to the Gen. List; Temp. 2nd Lieut. (on prob.) J. C. Barrett, Gen. List; June 20th. 2nd Lieut. (Temp. Lieut.) R. D. W. McKergow, D. Gds., from a Flying Officer (Ob.), seniority Sept. 13th, 1916; 2nd Lieut. (on prob.) H. N. S. Skeffington, S.R.; Temp. 2nd Lieut. (on prob.) M. P. J. G. Hamel, Gen. List; Temp. 2nd Lieut. (on prob.) F. J. Williams, Gen. List; June 22nd.

**Flying Officers (Observers).**—2nd Lieut. J. H. Hartley, R. Muns. Fus., and to be sec'd.; June 24th, seniority Mar. 12th. Temp. Lieut. C. E. W. Lockyer, R.A., and to be transf'd. to the Gen. List; May 17th, seniority April 10th. Lieut. J. S. Balfour, Can. Gen. List; June 13th, seniority, May 16th.

**Park Commander.**—2nd Lieut. (Temp. Capt.) J. Dickson, S. Afr. Def. Force, from a Staff Capt., and to be Temp. Major whilst so employed, vice Major Lord R. E. Innes-Ker, I. Gds., S.R.; June 25th.

**Equipment Officers, 2nd Class.**—From the 3rd Cl.:—Temp. Lieut. R. de



Sarigny, Gen. List; Temp. 2nd Lieut. A. W. Empson, Gen. List, and to be Temp. Lieut. whilst so employed; June 8th. 3rd Class.—2nd Lieut. L. F. Carter, May 30th. Temp. Lieut. L. H. Bainbridge-Bell, M.C., R. Muns. Fus.; 2nd Lieut. H. Edge, R. W. Fus. (T.F.); June 16th. 2nd Lieut. D. J. Parry, S.R., 2nd Lieut. W. R. Kells, S.R.; June 19th.

**Memoranda.**—The date of seniority of Flight-Lieut. C. L. E. Geach as Temp. Capt. is April 1st, and not as in *Gazette* of June 29th.

To be Temp. 2nd Lieuts. (on prob.) for duty with the R.F.C.:—L. A. Lavender; June 22nd. S. Williamson, A. J. Martin; June 24th. H. M. Temple; June 25th. F. Adams; June 26th. H. H. Cox, D. W. Godden, J. de C. Ballardie, W. A. G. Thicknesse, C. Clayden; June 29th.

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) H. R. Hodgson is confirmed in his rank.

**Special Reserve of Officers.**—Temp. 2nd Lieut. E. W. Savours resigns his commission; July 12th.

*London Gazette, Supplement, July 12th.*

Qr.-Mr. and Hon. Lieut. J. Ramsay is placed temporarily on the h.p. list on account of ill-health; July 13th.

The following appointments are made:—

**Flying Officers.**—Temp. 2nd Lieut. (on prob.) T. Littler, Gen. List; May 18th. Temp. 2nd Lieut. F. H. Waldron, A.S.C., and to be transf'd. to Gen. List; May 23rd. Lieut. C. M. Eastley, R.F.A. (T.F.), from a Flying Officer (Ob.); May 24th, seniority Oct. 10th, 1916. Temp. Lieut. R. C. Preston, R.E.; May 25th. 2nd Lieut. W. Sharp, from an Equipment Officer, 3rd Cl.; May 27th. Temp. 2nd Lieut. (on prob.) A. C. McArthur; May 29th. Temp. 2nd Lieut. C. C. Miller, W. Rid. R., from a Flying Officer (Ob.), seniority June 5th, 1916; Temp. 2nd Lieut. (on prob.) P. Carpenter, Gen. List; Temp. 2nd Lieut. (on prob.) C. W. Bell, Gen. List; June 16th. Temp. Lieut. A. C. N. M. P. de Lisle, attd. Leic. R., and to be transf'd. to Gen. List; Temp. 2nd Lieut. (on prob.) A. H. Gilbert, Gen. List; Temp. 2nd Lieut. (on prob.) O. C. Bridgeman, Gen. List; 2nd Lieut. A. R. Churchman, Yeo. (T.F.), and to be sec'd.; Temp. 2nd Lieut. (on prob.) R. H. Kemp, Gen. List; Temp. 2nd Lieut. (on prob.) G. F. C. Caswell, Gen. List; June 19th. Lieut. S. H. Allen, Canadian Gen. List; 2nd Lieut. C. C. Gadsden, R.W. Surr. R. (T.F.) and to be sec'd.; Temp. 2nd Lieut. (on prob.) D. H. Montgomery, Gen. List; Temp. 2nd Lieut. (Temp. Lieut. R. A. Wingfield, R. Irish Fus., from a Flying Officer (Ob.), seniority June 9th, 1916; June 21st. Lieut. E. D. Fanshawe, D. Gds., and to be sec'd.; Temp. 2nd Lieut. (on prob.), Gen. List, and to be confirmed in their rank:—R. B. Salisbury, H. Briggs, L. A. Lewis, L. Rawnsley, H. R. Sayers, C. G. Imeretinsky, N. Openshaw, A. H. Skinner, C. R. Rawbone; June 22nd. Temp. 2nd Lieut. W. S. Joel, Gen. List, from a Flying Officer (Ob.), seniority Feb. 23rd, 1916; Temp. 2nd Lieut. (on prob.), Gen. List, and to be confirmed in their rank:—S. E. Meering, G. B. Ash, V. W. Thompson; 2nd Lieut. (on prob.) E. W. Powell, S.R.; Temp. 2nd Lieut. (on prob.) A. A. Lessard, Gen. List, and to be confirmed in his rank; June 24th. The appointment of 2nd Lieut. R. R. Riggs, S.R., is antedated to March 28th.

**Balloon Officers.**—Temp. 2nd Lieut. E. S. B. Tavenor, R. Berks. R., and to be transf'd. to Gen. List; Jan. 31st. Temp. 2nd Lieut. W. E. G. Cutler, Gen. List; Temp. 2nd Lieut. (on prob.) B. G. Porter, Gen. List; May 30th. Temp. 2nd Lieut. H. W. Connell, Gen. List; June 15th. 2nd Lieut. J. E. Burke, R.G.A., S.R.; June 16th.

**Schools of Instruction—Schools of Military Aeronautics.**

**Instructors (graded as Flight Commanders), and to be Temp. Capt. whilst so employed.**—Temp. Lieut. G. H. Gordon, Gen. List, a Flying Officer; March 28th. Lieut. G. G. Hubbard, S.R., a Flying Officer; April 20th. **Graded as Equipment Officers, 1st Class.**—Lieut. (Temp. Capt.) A. A. Nathan, Yeo. (T.F.) a Flying Officer (Ob.), and to retain his temp. rank whilst so employed; May 26th. 2nd Lieut. (Temp. Lieut.) C. R. Fleming-Williams, S.R., from an Asst. Instr. (graded as an Equipment Officer, 2nd Cl.), and to be Temp. Capt. whilst so employed; June 20th.

**Assistant Instructors (graded as Equipment Officers, 2nd Class).**—Temp. 2nd Lieut. R. Raintord, Gen. List, an Equipment Officer, 3rd Cl., and to be Temp. Lieut. whilst so employed; Feb. 27th. Temp. 2nd Lieut. C. H. Collins, Gen. List, a Flying Officer, and to be Temp. Lieut. whilst so employed; Mar. 28th. 2nd Lieut. (Temp. Lieut.) L. V. Drake, Yeo. (T.F.), a Flying Officer, vice 2nd Lieut. (Temp. Lieut.) A. C. Day, S.R.; March 31st. Temp. Lieut. L. de B. Collette, Gen. List, a Flying Officer (Ob.); May 13th. 2nd Lieut. (Temp. Lieut.) D. Clark, R.F.A. (T.F.), a Flying Officer (Ob.); Temp. 2nd Lieut. H. Franklin, Gen. List, an Equipment Officer, 3rd Cl., and to be Temp. Lieut. whilst so employed; May 26th.

**Memoranda.**—Temp. 2nd Lieuts. to be Temp. Lieuts., Gen. List, for duty with R.F.C., and to be transf'd. to Gen. List where so stated:—N. O. Vinter, Motor M.G.C., and to be transf'd. to Gen. List; E. F. W. Smith, W. St. J. Scott, F. W. Day, R. V. Franklin, H. M. Gibbs, O. Williams, H. W. Soubly, K. A. Meek, H. Jackson, V. H. Baker, R. W. Follett, (Temp. Capt.) B. St. J. Boulbee, C. C. Brill, (Temp. Capt.) P. D. Stuart, (Temp. Capt.) B. C. Rice, (Temp. Capt.) J. H. Norton, M.C., D. V. Armstrong, H. G. Smart, C. R. Richardson, G. M. E. Bayley, G. F. Ward, W. B. Long, H. Lambourne, (Temp. Capt.) E. B. Mason, E. S. Leece, Welsh R., and to be transf'd. to Gen. List; C. H. Keele, E. H. Kann; Nov. 30th, 1916.

**Supplementary to Regular Corps.**—The following 2nd Lieuts. (on prob.) are confirmed in their rank:—R. M. Makepeace (whose name is as now described, and not as in the *Gazette* of Dec. 5th, 1916), R. J. Brownell, L. Cummings, G. N. Moore, L. M. Archibald, W. G. Salmon, E. C. Clark, G. V. Walsh, G. A. Mitchell, E. D. Perney, T. H. Barton, J. C. Foden, E. S. Meek, T. W. Kerr, H. N. S. Skeffington, F. J. H. Palmer, A. H. Comfort, F. C. E. Dimmick, A. C. B. Hanbury, J. D. S. Munro, N. H. Kemp, A. T. Drinkwater, H. G. Bell, W. W. Cook, M. C. Healy, A. Wald, H. J. Forsaith, C. A. H. Aspinall.

*London Gazette Supplement, July 13th.*

The following appointments are made:—

**Squadron Commander.**—Lieut. (Temp. Capt.) A. W. H. James, M.C., Hrs., from a Flight-Comdr., and to be Temp. Major whilst so employed; June 26th.

**Flight-Commander.**—Temp. 2nd Lieut. (Temp. Lieut.) W. J. Tempest, D.S.O., Gen. List, from a Flying Officer, and to be Temp. Capt. whilst so employed; June 27th.

**Flying Officers.**—2nd Lieut. W. E. Swann, R. Innis. Fus., S.R., and to be sec'd.; April 17th. 2nd Lieut. (Temp. Capt.) W. P. Holt, A.S.C. (T.F.), and to be sec'd.; Lieut. T. E. Wyld, Norf. R. (T.F.), and to be sec'd.; April 20th. Lieut. C. F. Hoyle, M.C., Yeo. (T.F.), and to be sec'd.; April 30th. 2nd Lieut. M. McCall, R. Sc. Fus. (T.F.), and to be sec'd.; 2nd Lieut. J. R. Patterson, R.F.A., S.R.; May 12th. 2nd Lieut. A. G. V. Taylor, Ind. Inf.; May 16th. 2nd Lieut. H. L. Sayer, R.F.A., S.R.; May 28th. Temp. 2nd Lieut. W. H. Winter, Gen. List, from a Flying Officer (Ob.); May 31st, seniority Sept. 14th. Temp. 2nd Lieut. (on prob.) A. K. Prentice, Gen. List, and to be confirmed in his rank; June 4th. 2nd Lieut. A. J. Homersham, Lond. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. (on prob.) C. W. G. Ratsey, Gen. List, and to be confirmed in his rank; June 5th. 2nd Lieut. N. A. Hardie, High. L.I. (T.F.), and to be sec'd.; Temp. 2nd Lieut. E. S. Pfeiffer, R.A., and to be transf'd. to Gen. List; June 6th. 2nd Lieut. C. N. Thompson, Ind. Army Res. of Officers; Temp. 2nd Lieut. (on prob.) H. Spencer, Gen. List, and to be confirmed in his rank; June 7th. 2nd Lieut. A. Jerrard, S. Staff. R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. D. L. Lynn, Gen. List; 2nd Lieut. E. P. Fulton, S.R.; June 14th. Temp. 2nd Lieut. S. Hewett, Gen. List; Temp. 2nd Lieut. E. N. A. Remington, attd. R. Berks. R., and to be transf'd. to Gen. List; Temp.

2nd Lieut. R. H. Nixon, Gen. List; Temp. 2nd Lieut. (on prob.) A. H. Rayner, Gen. List; Temp. 2nd Lieut. (on prob.) R. W. Wickham, Gen. List; Temp. 2nd Lieut. H. T. Noakes, Gen. List; June 15th. Temp. 2nd Lieut. (Temp. Lieut.) A. W. Peacock, R. Scots; June 16th. Temp. Lieut. M. D. G. Drummond, A.S.C., and to be transf'd. to Gen. List; June 17th. Temp. 2nd Lieut. P. G. Burnes, Gen. List; Temp. Capt. J. O. C. Orton, Norf. R., from a Flying Officer (Ob.), seniority Dec. 15th, 1915; June 17th. Capt. H. M. Rushworth, Lond. R. (T.F.); Temp. 2nd Lieut. (on prob.) D. D. Lockwood, Gen. List; Temp. Lieut. W. R. G. Pearson, Gen. List, from a Flying Officer (Ob.), seniority May 13th, 1916; June 18th. Temp. 2nd Lieut. (on prob.) H. M. Hutton, Gen. List; Temp. 2nd Lieut. (on prob.) D. W. M. Miller, Gen. List; 2nd Lieut. S. G. Robinson, S.R.; 2nd Lieut. H. J. Brownell, S.R.; June 19th. Temp. 2nd Lieut. (on prob.) P. G. Angood, Gen. List, and to be confirmed in his rank; 2nd Lieut. A. T. Drinkwater, S.R.; Temp. 2nd Lieut. (on prob.) G. B. Roberts, Gen. List; June 20th. Temp. 2nd Lieut. (on prob.) H. M. Moody, Gen. List; Temp. 2nd Lieut. (on prob.) C. A. Moody, Gen. List; Temp. 2nd Lieut. (on prob.) P. F. O. Frith, Gen. List; Temp. 2nd Lieut. (on prob.) G. R. C. Oliver, Gen. List; Temp. 2nd Lieut. (on prob.) G. La T. Stooke, Gen. List; Temp. 2nd Lieut. (on prob.) A. McD. Hyslop, Gen. List; Temp. 2nd Lieut. (on prob.) A. Beck, Gen. List; Temp. 2nd Lieut. (on prob.) G. W. Higgs, Gen. List; June 21st. Capt. J. L. Head, Lond. R. (T.F.), from a Flying Officer (Ob.), seniority July 9th, 1916; Temp. 2nd Lieut. (on prob.) W. C. Gardiner, Gen. List; Temp. 2nd Lieut. (on prob.) J. L. K. Anderson, Gen. List; Lieut. W. P. Harris, Can. Gen. List; Temp. 2nd Lieut. (on prob.) O. Clayton, Gen. List; Temp. 2nd Lieut. (on prob.) T. H. Buswell, Gen. List; Temp. 2nd Lieut. (on prob.) E. P. Griffith, Gen. List; June 22nd. Temp. 2nd Lieut. (on prob.) A. G. N. Wall, Gen. List; 2nd Lieut. (on prob.) E. C. Macdonnell, S.R.; 2nd Lieut. (on prob.) H. T. Leslie, S.R.; 2nd Lieut. (on prob.) W. A. Leslie, S.R.; Temp. 2nd Lieut. (on prob.) D. Price, Gen. List; Temp. 2nd Lieut. (on prob.) W. J. Henney, and to be confirmed in his rank; June 23rd.

**Flying Officers (Observers).**—2nd Lieut. J. Diamond, K.O. Sco. Bord., S.R., from Temp. Lieut., R. Scots, seniority Nov. 17th, and to be sec'd.; Lieut. L. V. Gray, Can. Mtd. Rif., seniority Jan. 22nd; Temp. 2nd Lieut. C. E. Prescott, A.S.C., seniority Feb. 15th, and to be transf'd. to Gen. List; 2nd Lieut. I. B. Wallis, R.F.A., S.R., seniority Mar. 14th; Temp. Lieut. N. V. Harle, York. R., seniority Mar. 27th, and to be transf'd. to Gen. List; 2nd Lieut. F. Yorke, Ches. R. (T.F.), April 5th, and to be sec'd.; 2nd Lieut. H. W. Taylor, M.C., R.F.A., S.R., seniority April 10th; 2nd Lieut. R. E. Butler, Conn. Rang., S.R., seniority April 21st, and to be sec'd.; Temp. 2nd Lieut. (on prob.) F. Cornish, Gen. List, seniority from May 10th; June 20th. 2nd Lieut. W. M. Iles, Lond. R. (T.F.), seniority Oct. 14th, and to be sec'd. 2nd Lieut. C. D. McGurk, Durh. L.I. (T.F.), seniority Nov. 11th, and to be sec'd.; 2nd Lieut. G. H. Wenn, R.F.A. (T.F.), seniority Feb. 16th, and to be sec'd.; Lieut. R. H. Ellis, D. of Corn. L.I., S.R., seniority Mar. 3rd, and to be sec'd.; 2nd Lieut. L. M. Copeland, N. Staff. R. (T.F.), from K. R. Rif. C., seniority Mar. 11th, and to be sec'd.; Temp. 2nd Lieut. M. J. Dalton, R. Ir. Rif., seniority Mar. 12th, and to be transf'd. to Gen. List; Lieut. D. A. Nicoll, R.A., seniority Mar. 17th, and to be sec'd.; Temp. 2nd Lieut. (on prob.) A. R. H. Noss, Gen. List; June 20th, seniority May 16th, and to be confirmed in his rank; June 21st.

**Balloon Company Commander (graded as a Squadron Commander).**—Capt. H. M. Meyler, M.C., Bord. R., from a Balloon Co. Comdr. (graded as a Flight-Comdr.), and to be Temp. Major whilst so employed; June 16th.

**Balloon Commander (graded as a Balloon Officer).**—Lieut. G. M. Dean, Can. Art., from a Balloon Officer; June 18th.

**Balloon Officers.**—Temp. 2nd Lieut. (on prob.), Gen. List, and to be confirmed in their rank: W. C. Brown, G. N. Whitehead; June 15th. Temp. Capt. J. C. Woolley-Dod, R.A., and to be sec'd.; 2nd Lieut. W. R. F. Gillham, R.A., and to be sec'd.; Temp. 2nd Lieut. C. G. Slade, A. Cyclist Corps, and to be transf'd. to Gen. List; 2nd Lieut. L. D. Hammond, High. L.I. (T.F.), and to be sec'd.; June 26th.

**Special Appointment.**—2nd Lieut. (Temp. Lieut.) A. C. Day, S.R., from an Asst. Instr., R.F.C., School of Mil. Aeronautics, retains the grading of an Equipment Officer, 2nd Cl., and the temp. rank of Lieut. whilst so employed; Mar. 31st.

**Equipment Officers, 1st Class.**—2nd Lieut. (Temp. Lieut.) E. McEvoy, Oxf. and Bucks. L.I., from the 2nd Cl., and to be Temp. Capt. whilst so employed; June 24th.

**2nd Class.**—Lieut. F. Hitchens, S.R., from the 3rd Cl.; June 24th.

**3rd Class.**—2nd Lieut. A. C. B. Hanbury, S.R.; June 4th. Temp. 2nd Lieut. (on prob.), Gen. List, and to be confirmed in their rank: R. E. S. L. Bristow, T. Kerr-Jones; June 7th. T. M. J. Jenkins, G. B. Nichol, H. C. Hull, G. H. Wiggins; June 20th.

**Memorandum.**—Major A. H. W. Saunders-Knox-Gore, Ret. List, to be Temp. Major for duty with R.F.C.; June 13th.

Temp. Lieut. C. B. Baker, Oxf. and Bucks L.I., to be an Adj't., vice Lieut. G. W. Panter, R. Ir. Rif.; May 21st.

*London Gazette Supplement, July 14th.*

The following appointments are made:—

**Wing Commander.**—Capt. (Temp. Major) A. S. Barratt, M.C., R.A., from a Sqdn.-Comdr., and to be Temp. Lieut.-Col. whilst so employed; June 2nd, but without pay or allowances prior to June 26th.

**Squadron Commander.**—Lieut. (Temp. Capt.) T. L. Mallory, Lan. Fus., S.R., from a Flight-Comdr., and to be Temp. Major whilst so employed; May 14th.

**Flying Officers.**—2nd Lieut. (on prob.) E. C. Clark, S.R.; May 8th (substituted for the notification in the *Gazette* of May 30th). 2nd Lieut. H. I. Turner, R.F.A. (T.F.), and to be sec'd. Temp. 2nd Lieuts. (on prob.) Gen. List, and to be confirmed in their rank: D. R. Brook, A. R. Kingsford, S. K. C. Welinkar; June 22nd. 2nd Lieut. F. H. Thorndike, Yeo. (T.F.), and to be sec'd.; June 23rd. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: J. D. Watson; June 23rd. A. W. E. Gouriet, S. Field, H. H. Wilson; June 24th. Lieut. R. Hilton, M.C., R.A., from a Flying Officer (Ob.), seniority Feb. 25th; Lieut. J. R. Law, Can. A.S.C.; 2nd Lieut. A. H. Dalton, Hrs., and to be sec'd.; June 25th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank: C. D. Barnard and F. W. Kirby.

**Flying Officers (Observers).**—Temp. 2nd Lieut. H. Wade, Leic. R., and to be transf'd. to Gen. List; Mar. 22nd, seniority Jan. 4th. Temp. Lieut. J. Evans, M.C., Welsh R., seniority Jan. 11th, and to be transf'd. to Gen. List; Capt. C. G. W. Swire, Dns., seniority Feb. 3rd, and to be sec'd.; June 24th. 2nd Lieut. N. C. Crombie, R.F.A. (T.F.), and to be sec'd.; June 26th, seniority Feb. 13th. Temp. Lieut. J. A. Manners-Smith, R.A., and to be transf'd. to Gen. List; June 25th, seniority Mar. 13th. Lieut. W. M. E. Chester, Can. Inf.; June 27th, seniority Mar. 20th. Temp. 2nd Lieut. W. Algie, D.S.O., North'd. Fus., and to be transf'd. to Gen. List; June 28th, seniority April 21st. Temp. 2nd Lieut. L. E. C. Middleton, E. York R., with seniority from April 27th; Temp. 2nd Lieut. (on prob.) L. F. Williams, Gen. List, seniority May 17th; June 25th. Temp. 2nd Lieuts. (on prob.) Gen. List, and to be confirmed in their rank:—June 26th: R. N. W. Jeff, seniority May 9th; J. W. Mullen, seniority May 16th; D. J. Pilmore-Bedford; June 28th, seniority May 24th. 2nd Lieut. G. S. M. Gould, M.C., R.F.A., S.R.; June 26th, seniority May 25th.

**Adjutants.**—From Equipment Officers, 3rd Cl. June 26th: Lieut. M. Skitt, R.F.A., S.R.; Temp. Lieut. J. Stewart, R. Sc. Fus.



**Equipment Officers, 1st Class.**—Temp. Capt. W. H. Miles, Gen. List, from a Wing Instructor in Gunnery (graded as a Flight-Comdr.), and from a Flying Officer; April 18th.

**3rd Class.**—Temp. 2nd Lieut. (on prob.) J. N. Hill, Gen. List, and to be confirmed in his rank; April 3rd. Temp. 2nd Lieut. (on prob.) C. C. Cox, Gen. List, and to be confirmed in his rank; May 1st. 2nd Lieut. (on prob.) H. W. Pollock, S.R.; May 23rd. Temp. Major A. H. W. Saunders-Knox-Gore, Gen. List; June 13th. Temp. 2nd Lieut. (on prob.) H. F. W. Farquharson, Gen. List, and to be confirmed in his rank; June 19th. Temp. 2nd Lieut. A. Chapman, attd. E. Surr, R., and to be transd. to Gen. List; June 23rd. 2nd Lieut. (Temp. Capt.) R. B. G. Greig, High. L.I. (T.F.), and to be secd.; Temp. Or-Mr. and Hon. Lieut. H. C. Gaze, R. Fus.; 2nd Lieut. W. G. Lamb, E. York. R., S.R., and to be secd.; 2nd Lieut. (on prob.) P. Avery, S.R.; Temp. 2nd Lieut. A. B. Blayney, Gen. List; 2nd Lieut. (on prob.) C. N. Henderson, S.R.; Temp. Lieut. H. Allsebrook, attd. R. War. R., and to be transd. to Gen. List; June 26th. Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank; J. F. Guinan, J. L. V. Bullimore; 2nd Lieut. (on prob.) B. H. Davies, S.R.; Temp. 2nd Lieut. A. W. Hamlin, Gen. List; 2nd Lieut. (on prob.) W. F. Hendry, S.R.; Temp. 2nd Lieuts. (on prob.) Gen. List, and to be confirmed in their rank; S. D. A. Jolly, B. Rotherham, A. B. Starke; 2nd Lieut. (on prob.) W. Calvert, S.R.; 2nd Lieut. (on prob.) S. H. Cummings, S.R.; 2nd Lieut. (on prob.) E. W. Kemp, S.R.; 2nd Lieut. (on prob.) R. G. Nelson, S.R.; 2nd Lieut. (on prob.) W. R. Rhodes, S.R.; Temp. 2nd Lieuts. (on prob.), Gen. List, and to be confirmed in their rank; J. Smallbone, A. J. Bird; 2nd Lieut. (on prob.) C. G. Boot, S.R.; 2nd Lieut. (on prob.) C. Boyd, S.R.; 2nd Lieut. (on prob.) C. E. Power, S.R.; 2nd Lieut. (on prob.) F. O. Sonderbye, S.R.; 2nd Lieut. (on prob.) W. J. Walford, S.R.

**Memoranda.**—To be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.:—June 27th: A. W. McClellan, J. W. Saxon, C. C. Pilkington; June 29th.

**Supplementary to Regular Corps.**—2nd Lieut. (on prob.) W. Elliott resigns his commission; July 15th.



## THE ROYAL TOUR OF THE BATTLEFIELDS IN FRANCE.

FOLLOWING the return of the King and Queen to British soil last week some very vivid descriptions have been published of some of the experiences through which King George and Queen Mary have gone. In the *Daily Telegraph*—this is from the pen of Mr. Philip Gibbs—and in the course of his interesting story he writes:—"Not once, but several times, I saw the King in fields above which there were brisk engagements in the air, the rattle of machine-gun fire between German and British pilots, and the short knocking of 'Archie' shells flinging snowballs along the track of hostile planes. All this was the real thing, not staged for a Royal show, and with a spice of peril in it."

Later during the tour, Mr. Gibbs says:—

"The war was not far away. In the afternoon the King motored nearer to it, skirting the old town of Furnes, into which the enemy shoots now and then with his long-range guns, and going to Coxyde, in a desolate waste of sands, from which we could hear very clearly the noise of bombardment and the thunder of German guns. The way back brought us close to Dunkirk, which the enemy has been trying to reach with heavy shell. That afternoon the King visited two aerodromes. The flying officers were presented to him, and then some of them ran to their machines and slipped quickly into their flying kit, and at the word 'Contact,' soared aloft at a terrific pace, climbing up the high ladders of the sky like acrobats of incredible agility, falling, banking, cork-screwing and nose-diving in an aerial circus. Some of these young men had just attacked and destroyed two of the German raiders back from Harwich."

"A similar exhibition of skill was given at an aerodrome of the R.N.A.S., where the King was afterwards entertained to tea. Glorious children, these flying fellows, tuned up to the highest pitch of youthful spirit, taking frightful risks light-heartedly, and making merry of the beastly game of war as long as their nerves stand the strain of service. It was pretty good to meet a Fleet Street man among them, and to get a greeting from the other 'Street of Adventure' out here on the Belgian coast, where it seems so far away."

On July 17th Mr. Gibbs returns to this side of the King's visit as follows:—

"From this laboratory of Black Art (liquid fire, smoke

barrage, &c.) the King went to one of those fields where the machinery of war is beautiful, rising above the ugly things of this poor earth with light and grace. From this aerodrome, as he came, three fighting planes of our fastest type went up in chase of an imaginary enemy. They rose at an amazing speed, and shot across the sky like shadows racing from the sun."

"When they came back, those three boys up there seemed to go a little mad, and played tricks in the air with a kind of joyous carelessness of death. They tumbled over and over, came hurtling down invisible corkscrews, looped the loop very close to earth, flattened out after headlong dives, and rose again like swallows. The King was interested in the ages of these pilots, and laughed when they confessed to their youth, for one was 19 and another 20. He inquired about a number of pilots by name, and knew their exploits, though they are kept so secret from the world, which knows nothing of individual heroes of the air until they are dead."

Mr. W. Beach Thomas, in the *Daily Mail* upon the same theme, writes:—

"No other day in the visit was to be quite so full of incident as the first, though the sum of incidents is colossal, and almost every day was in its way notable. On the morning of July 5th His Majesty journeyed to meet the King of the Belgians on the sea coast, and not the least wonderful part of the day was the journey itself. Wherever he moved the air was full of our planes—landplanes and seaplanes, flying at all altitudes, some escorting him, some passing this way and that on their way to and from the fighting."

"I suppose the King must have seen hundreds. At one point he had a long talk with a group of young naval airmen, who had just come back from a raid and were full of native delight at their success. He visited two large aerodromes and watched a number of the best pilots do what they call 'fancy stunts'—all those new varieties of the tumbler pigeon's art that are daily performed with more speed and abandonment as the machines and the science of their management improve. But the King was always more interested in the man than the machine, as behoves the King of his people."



### A New South Wales State Aviation School.

THE Hon. W. A. Holman, Premier of New South Wales, who is at present on a visit to this country, and who recently was at the Western Front, during which visit Major-Gen. Holmes was killed by a shell within a few feet of the Premier, is the founder of the first State aviation school of Australia in New South Wales. The school is situated at Richmond, near Sydney, and is designed to train men who are qualified for the Army, in every branch of the art of aviation prior to their military training, thus enabling the latter to be of as brief duration as possible. Mr. Holman, was, we understand, greatly interested in the work of the R.F.C. while in France, and is keenly following the work of the Air Services in this country.

### The Italian Way.

A SEMI-OFFICIAL statement issued in Rome on July 3rd says:—

"During the night of July 2nd one of our seaplanes again flew over Trieste and dropped notices to the following effect:—

"Our bombardment last night, June 30th, of the industrial zone of Trieste was a reply to the aerial outrage which Austria has once more tried to commit on Venice."

"At all times, in all weathers, and with the most powerful means at our command, we shall know how to reply immediately to barbarous crimes."

"Notwithstanding a vigorous enemy cannonade by anti-

aircraft batteries, our brave airmen returned to their base unharmed."

### The R.F.C. and the Battle of Messines.

At last a glimpse is available of the Huns' view of this great battle in France on June 7th. It is through the *Cologne Gazette* that a description has been published, written by Professor Wegener. Naturally the author paints his picture with the British as the losers, but even he in some of the details has to acknowledge the irresistible whirlwind of fighting which carried the German "impregnable" positions. Coming to the aerial side of the battle, Professor Wegener says:—

"The operations are prefaced by innumerable enemy airmen, who, at the beginning of the preparations for attack, suddenly appeared here like a swarm of locusts and swamped the front. They also work on cunningly calculated methods. Their habit is to fly in three layers—one quite high and with their little machines almost invisible from the ground, one in the middle, and the third quite low. In this way they are almost always able to menace our airmen from several sides at once. Just as at the beginning of the battle of the Somme the English airmen who fly lowest show an immense insolence. They come down to 200 metres or even less from the ground, and shoot at our troops with their machine guns, which are specially adapted to this purpose. We, on the other hand, fight them from the ground with rifle and machine gun."

This is hardly the war-cry of a victorious enemy!



## A BORING AND RECESSING MACHINE.

THE machine, Type PF, which Thos. Robinson and Son, Ltd., of Rochdale, have evolved for the purpose of boring and recessing for aircraft manufacture, is shown in the accompanying illustration. It was primarily designed for boring the bosses of airscrews and propellers, but may also be used for recessing and routing out panels in the ribs and spars of aircraft, either from the solid wood or in 3-ply.

The ordinary type of boring machine, particularly where the spindle passes through the bearings, failed to satisfy the demands for exact work and range of movements required in the boring and recessing of propellers.

The machine now illustrated is claimed to leave a perfectly clean and true centre hole in the boss of the largest propeller, using a two-wing twist bit, as known to most machine wood-workers.

The makers claim an important improvement in the mounting of the spindle—the whole head, with its bearings, rising and falling bodily, giving the maximum support to the spindle at every position.

The bit need only be steadied by its own shank in the spindle chuck, and by simply changing the boring bit or tool, a propeller boss can be completely bored, rounded on the edge of the hole, recessed when necessary, and the bolt holes drilled without disturbing the setting of the work, *i.e.*, the propeller on machine table. A feature of the machine is the compound movements of the table, which give all the required positions for drilling the various holes.

When recessing panels in the ribs and spars of aircraft, a profiling or forming plate is used below the work, to give the shape of the panel required; the work being passed under the cutter by handfeed. For half-lapping a large diameter cutterblock or recessing cutter of suitable shape is all that is necessary, the timber being traversed past the cutter by handwheel and screw to form the recess or half-lap.

The new machine offers a solution of the one-speed objection often found in boring machines of the old type. Many only give one speed of about 1,000 r.p.m., while the machine now described has three speeds, *viz.*, 1,200, 2,000 and 3,000 r.p.m.

The spindle head has a vertical movement by hand lever of 6 inches, and by screw 6 inches, the maximum combined movement being 10 inches.

The distance from the centre of the spindle to the machine pillar is 18 inches, and the spindle is arranged to swing cutters up to 7 inches diameter, in the topmost position. Larger cutters can be used when the spindle is lowered slightly.

The table is 39 inches by 19 inches, and is slotted to carry a back fence and screw clamp, and also eccentric lever clamp. It has a longitudinal traverse by screw of 15 inches, and a cross traverse by screw of 9 inches. The maximum distance between chuck and table is 24 inches. The table will cant 30° sideways and to the front. Adjustable stops are arranged to predetermine the movements required.



### American Blimps.

THE first of the series of 16 small dirigibles, or "Blimps"—fully described in a recent issue of "FLIGHT"—that is being constructed for the U.S. Navy, has been completed, and has made a successful trial flight of over 400 miles. Leaving Chicago at midnight, it arrived at Akron, Ohio, at about 4.30 the next afternoon. This was merely an unofficial experimental cruise, and no attempt was made to obtain a higher speed than the 24 m.p.h.

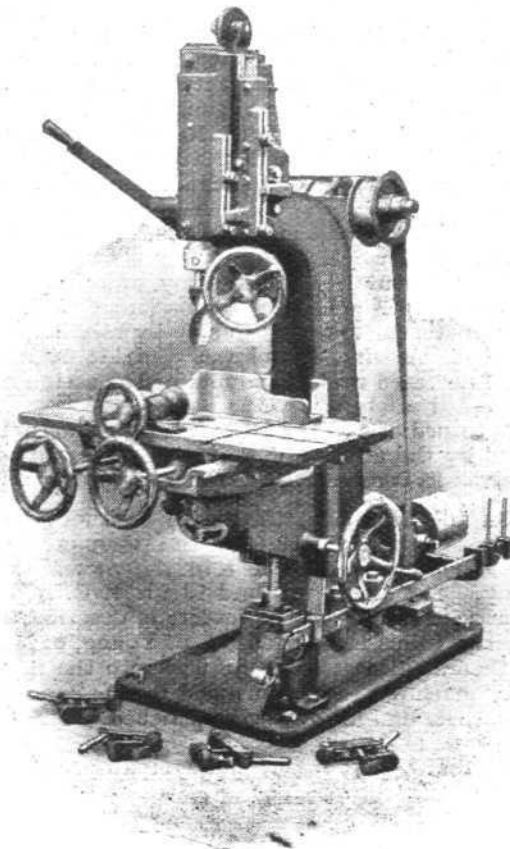
### America Getting Going.

FROM Washington comes details of the intentions, by way of a start, of the U.S. in regard to aviation in the war. The War Department has transmitted the draft of the Government's Aviation Bill to the House of Representatives' Military Committee. The measure provides for the immediate construction of 22,625 aeroplanes, for which a vote of \$639,000,000 is asked. Mr. Dent has introduced a Bill in the House of Representatives which has for its object the raising of 75,000 trained aviators. In the meantime Mr. Howard Coffin, the chairman of the Aircraft Production Board, who has just returned from a journey of inspection, states that rapid progress is being made in the construction of aviation fields for the training of American pilots.

The work at the Canute field at Rantoul, Illinois, has broken all records. About £100,000 worth of buildings have been constructed almost within a month, forming a village a mile long. This field, together with the Wilbur Wright field at Dayton, Ohio, and the Thomas Selfridge field at Mount Clemens, Michigan, will be completed by July 15th.

Where sufficient work will warrant a separate machine for recessing the ribs and spars, Messrs. Robinson supply this machine with a plain table, *i.e.*, without the compound slides and canting features—suitable for the hand-feed work above referred to.

The fast and loose driving pulleys are 8 inches diameter by  $4\frac{1}{2}$  inches face, and run about 750 r.p.m.



This machine, although primarily designed for aircraft work, it will be readily understood, has a wide application for general woodworking, especially where large multiple or fine limit work is required. The makers urge that it is not only useful "for the duration of the war," since it will be a live and economic factor in any scheme for changing over from war to peace work.



### Hun Seaplanes Accounted for.

ON July 10th the Admiralty issued the following notice:—"The Commodore, Lowestoft, reports that at 8 p.m. yesterday (July 9th) one of H.M. armed trawlers, 'Iceland,' Lieut. P. Douglas, R.N.R., in command, destroyed two enemy seaplanes and brought four prisoners back into port."

### Catching a Tartar.

SOME particulars are published by the *Daily Mail* of the incident in which the armed trawler "Iceland" destroyed two enemy seaplanes on July 9th. It would appear that the arrival of the four German airmen at Lowestoft created a good deal of interest. The two destroyed seaplanes had been trying to destroy shipping by bombs and torpedoes. One came down from a good height and, gliding on the water, discharged a torpedo at a passing steamer but missed. Then the patrol boat 'Iceland' came along. The seaplane tried to rise, but the sea sweeping over her floats prevented her. The patrol boat fired and hit the seaplane fair and square and put her out of action. The other seaplane came down, apparently to rescue the two pilots, who were struggling in the wreckage, when she too was hit by the patrol boat. Meanwhile the first seaplane had sunk. The two men in her were rescued by another boat. The second seaplane, considerably damaged, lay on the water at the mercy of the sea, and her crew, who were also struggling in the water, were rescued. One of them was wounded in the right foot.

### Armed Trawlers and Aeroplanes Working Together.

FROM telegraphic reports from Nes (Ameland), German torpedo craft are very active thereabouts, and from the same source it is announced that two aeroplanes have been noted as working last week in conjunction with some armed trawlers.

## AIR RAID CASUALTIES.

At an inquest held at Dartford on July 10th on 2nd Lieut. W. G. Salmon, R.F.C., who met his death on Saturday in the air raid, Lieut. D. G. Nairn, Adjutant, R.F.C., said deceased, who was a qualified pilot, went up on Saturday at 9.40. Witness saw him coming down. He appeared to lose control of the machine, which was in perfect order when he went up. On examination of the machine after the fall it was found that 55 rounds of ammunition were gone from the magazine.

Major G. Knight, R.A.M.C., who made a post-mortem examination, said deceased had two lacerated wounds in the forehead, and the skull was fractured from ear to ear. Probably that on the head was a gunshot wound, and the fracture was caused by the fall. Replying to Capt. H. Sison, R.F.C., Major Knight said it was possible for a man being hit by a bullet to lose and regain consciousness, and then lose it again.

Capt. Sison said he saw the machine about 2,000 ft. up coming down spinning sideways. Thinking it was someone coming down safely he momentarily looked away, and a few seconds later it was down. The machine was found to have the petrol tank punctured from side to side by a bullet, and all the petrol gone. A wire control was also hit by a bullet. He thought if deceased could have retained consciousness he could have landed safely.

The jury returned a verdict of "Death from fracture of the skull received by the fall to the ground, and from lacerated wounds received in combat with German aeroplanes."

In addition to the above, the death of another R.F.C. officer during the fight with the German raiders on July 7th, was disclosed by letters published in the *Streatham News* last Thursday. The officer was 2nd Lieut. J. E. R. Young, whose gallantry in attacking the raiders is described by his Major in a letter to his father, Mr. W. S. Young, of Mitcham Lane, Streatham. Almost alone he flew into the middle of the 22 enemy machines. Overwhelmed by the concentrated fire of his foes, he and his observer\* perished. The Major's letter is as follows:—

"It is with the deepest regret and sympathy that I have

\* Aerial-Gunner Taylor.

### £200,000 for Overseas Club Aircraft.

At a meeting of the New York branch (which had 160,000 members) of the Overseas Club on July 10th, Lord Northcliffe, who is president of the Club, said that the organisation had raised more than £400,000 for patriotic purposes, nearly half of which had been expended in providing an aircraft flotilla.

### 128 Million Pounds Sterling for Aircraft.

THE United States House of Representatives on July 15th, after four hours' debate without a division, appropriated a sum of £128,000,000 to give effect to the Administration's plan to send a great fleet of aeroplanes and airmen to the Western front. The House voted the money without asking for any details of the plans of the War Department, and without any knowledge of the number of aeroplanes and airmen to be sent to Europe. This is rightly interpreted, says *The Times* correspondent, as showing supreme confidence in the Administration. The short discussion in the House was perfunctory and entirely sympathetic to the proposal. President Wilson unreservedly favours the plan, and the action of the House leads to the hope that the Senate will act speedily. Meanwhile, preparations for the construction of aeroplanes and the training of airmen are going forward as if the Bill had been finally enacted.

### An Army Balloon Blocks Holborn.

AN exciting episode occurred on July 11th, when an Army balloon descended in High Holborn, nearly opposite the Chancery Lane Tube Station. The balloon, which had come from South-West London, had been observed at a low altitude for some time. A trailing rope was dropped from the balloon, and became entangled in some telephone wires, but the rope became released, and as the aeronauts were unable to ascend in spite of unshipping their ballast, a descent was decided upon. The rope was caught by a number of soldiers, who hauled the balloon down. Once the basket caught against a chimney-stack, but by careful manœuvring the carrier got clear, and as the basket eventually reached the street the occupants stepped out. The balloon, which filled the street from side to side and reached almost the housetops, was deflated and packed up ready for removal. During this operation onlookers were asked to refrain from smoking.

to write and inform you of your son's death, which took place on Saturday during the enemy aircraft attack on this country. Your son, as you know, had only been in my squadron for a short time, but quite long enough for me to realise what a very efficient and gallant officer he was, and what a tremendous loss he is to me. He had absolutely the heart of a lion and was a very good pilot. Your son has been up on every raid of late, and has always managed to get in contact with the enemy machines. The last raid, which unfortunately resulted in his death, shows what a very gallant officer we have lost.

"Almost single-handed he flew straight into the middle of the 22 machines, and both himself and his observer at once opened fire. All the enemy machines opened fire also, so he was horribly outnumbered. The volume of fire to which he was subjected was too awful for words. To give you a rough idea—there were 22 machines, each machine had four guns, and each gun was firing about 400 rounds per minute. Your son never hesitated in the slightest. He flew straight on until, as I should imagine, he must have been riddled with bullets.

"The machine then put its nose right up in the air and fell over, and went spinning down into the sea from 14,000 ft. I unfortunately had to witness the whole ghastly affair. The machine sank so quickly that it was, I regret, impossible to save your son's body; he was so badly entangled in the wires, &c. H.M.S. — rushed to the spot as soon as possible, but only arrived in time to pick up your son's observer, who, I regret to state, is also dead. He was wounded six times, and had a double fracture in the skull."

In forwarding the letter for publication Mr. W. S. Young states that it "will serve to assure us all that our splendid boys who, from their point of view, had the privilege and also the will and the pluck to put up noble efforts for our protection and for the defeat of the vilest enemy in all history."

Many other brave boys have been taken from his district, he adds, and his son was "just one of many willing to face certain death in order to help to stamp out the enemies of civilisation."

### Octave Lapize Killed.

OCTAVE LAPIZE, the French airman, has been killed in an aerial battle of four French aeroplanes against 19 German machines on the Western front. Before the war he had won the principal cycling events in France.

### French Seaplane Activity.

PARTICULARS are to hand of the French seaplane patrol service at various centres carried out during the month of May, and in all weathers, by which it appears 2,627 flights, averaging 1½ hours per flight, were carried out. On 14 occasions French seaplanes attacked German submarines, whilst in three cases they were successful in locating enemy minefields. An enemy cruiser was also attacked. Eight night bombardments on enemy bases in Belgium and the Adriatic were also successfully carried out, whilst as the result of three air battles two enemy machines were destroyed.

### Dropping in for Tea.

IN Reading, on the evening of July 11th, considerable excitement it is reported was aroused when an aeroplane was seen to descend suddenly near Caversham Bridge. The pilot was in imminent danger of falling into the Thames, but by a smart movement he headed his plane towards the promenade and managed to steer his way into the Old Tea Gardens. Just before landing the lieutenant jumped from the machine and got away with nothing worse than a bad shaking.

### From Japan.

GREAT progress is being made at the Nippon Flying School at Haneda (near Tokyo), which now builds its own machines. One of these, a Grahame-White type biplane, was put through its test flights last May by Mr. Seitaro Tamai, one of the school instructors. A flight on this same machine was also made over the suburbs of Tokyo, where the pilot dropped packages of advertisements. Eleven Japanese pupils were ready for their certificates by June, and a further ten or so were to start work with the arrival of the new machine. In addition to school work, passenger flights (at about 30s. a time), and exhibition flights are undertaken by the school. The instructors also give series of lectures on aviation, with the object of educating the general Japanese public in this important branch of science.



## RENÉ DESOUTTER, TEST-PILOT.

THOUGH possibly not quite so well known to the general public as his brother, Marcel, owing to the latter's exhibitions of skill in the spectacular days at Hendon, René Louis Desoutter has, nevertheless, accomplished a very great deal of flying, both in exhibition work and as a test-pilot.

Attaching himself to the Blériot Co. at their Hendon works early in 1912, with the object of learning aeroplane construction, he, after ten months of workshop practice, joined the same school as a pupil and learned to fly, obtaining his certificate on May 19th, 1913, just fifteen months later than his brother.

For a year he remained with the Blériot Co. as Assistant Instructor, and in May, 1914, joined as Chief Instructor at



the Ewen School, then in course of formation into the Caudron Co.

This was just previous to the outbreak of war, and when the declaration had taken place there was an immediate and almost overwhelming rush of pupils wishful to learn the art of aerial navigation.

Soon, however, the Caudron firm, like most others, was engaged on Service construction work only, and Desoutter automatically passed into the position of test pilot for machines of the Caudron Co.'s building, where he still remains, although he is still a free lance for testing machines of other constructors when his services are not required by the Caudron Co. He it was who tested the first Caudron

in this country fitted with a 100 h.p. Anzani engine, and later, in June, 1915, the first twin.

Before taking over the testing of these aeroplanes he graduated thoroughly in the French Caudron Co.'s works at Paris and Lyons. It will be remembered that owing to the push of the Germans towards Paris—now luckily being pushed the other way—the Caudron Co. had had to leave their old flying grounds before the advancing enemy. Some few interesting experiences have been his, amongst others the obtaining of the world's record for a seaplane (with a passenger and full war load of six hours' fuel), rising to an altitude of 14,000 ft.

Perhaps the queerest experience, and one which, although finishing without untoward trouble to either pilot or passenger, might easily have been otherwise, was when testing a new 'bus of the enclosed type.

Desoutter had arrived at the grounds just before lunch-time, and decided to make a trial flight with a weight to represent the passenger in the forward seat. All went well, and the machine behaved perfectly. Then came a desire among those assembled for a joy-ride, and the designer—luckily or unluckily, according to the point of view—secured the place of honour.

No sooner had the machine attained an altitude of about 1,000 ft. than she started to behave in a most remarkable manner. She would suddenly skid—not sideslip, but skid—out to one side, first to right and then to left, whilst the rudder seemed to have metaphorically taken the bit between its teeth, for it acted exactly in reverse to the pilot's wish. Also she developed a liking for getting into the wind, for, when coming down wind, she would suddenly turn about almost instantly to face the wind.

Landing under such conditions was a thing to be carefully reckoned with, yet it had to be done. There was a tree at the end of the aerodrome, and this Desoutter did his best to avoid, whilst the 'bus did its hardest to get to it head on. First it would slide to one side and then to the other, finishing up finally by just missing the trunk with its nose and sweeping off both right-hand wings. This is where the most curious part of the thing happened. Contact was made with the tree about 30 ft. from the ground, and by some miracle the broken parts clung to the trunk, the while the machine spiralled down it to the ground, landing both aviators unhurt. It then transpired that the trouble came about from a broken rudder post, the rudder flopping over from side to side as it pleased, thus taking over control from the pilot's hands, or rather feet.

To get lost in the clouds over Hendon, and to find himself over Hammersmith Bridge when he thought he was circling the aerodrome, was another experience, and goes to show how baffling these fleecy appendages of the atmosphere are to the aerial navigator.

As a last example, and perhaps a rather weird one, Desoutter was flying a machine fitted with a long exhaust cover over the engine, somewhat after the fashion of the German machines, when, five miles out at sea, he noticed this arrangement very slowly lifting at the front end. He cut out to come down, and the cover just as slowly returned to its proper position. On and off he had to do this all the way back, the cover responding in ratio as the pressure of the gases increased or decreased. Quite weird and rather unnerving, seeing that, had it altogether severed its connection, René might have been deprived of that cool-brained head of his, and England of a good pilot.

## SIDE-WINDS.

SIR JAMES B. MARSHALL, Director of Dockyards and Dockyard Work since 1906, has accepted the position of deputy-chairman of the shipbuilding firm of Messrs. John Samuel White and Co., of Cowes.

THE B. and P. Sports and Recreation Club occupies a prominent place in the activities of the workers in the Boulton and Paul Aircraft Works at Norwich. But they do not confine its benefits to themselves. Next Saturday, the 21st inst., the club is holding a sports meeting in aid of the British Red Cross Society (Norwich Division), when there is to be a long programme of athletic events for men and women, in addition to items described as "Old English," such as tugs-of-war, sack race, three-legged race and slow bicycle race.

THE Secretary of the Nieuport and General Aircraft Co., Ltd., informs us that, in order to prevent misunderstanding

and confusion, Langton Road, Cricklewood, London, N.W. 2, is their registered and only address, to which all communications should be sent; that they have no agent whatever in London or elsewhere, and that Major S. Heckstall-Smith is the general manager of the business of the Company.

How time flies. It must be nearly a decade since the remains of that ancient barge were dug up from under many feet of Thames mud when excavating for the foundations of the County Hall by the end of Westminster Bridge. Much water has flowed under that same bridge since then, and still the stately hall rears its walls but a fraction of the predetermined altitude. Yet in its nakedness, a use has been found for it—The Welfare and Economy Exhibition. In the Ministry of Munitions section much may be seen of shells in the making, from the little one-pounder to the 15-in. giant, 20 to 100 lb. aerial bombs, together with guns and mortars of various descriptions. In connection with

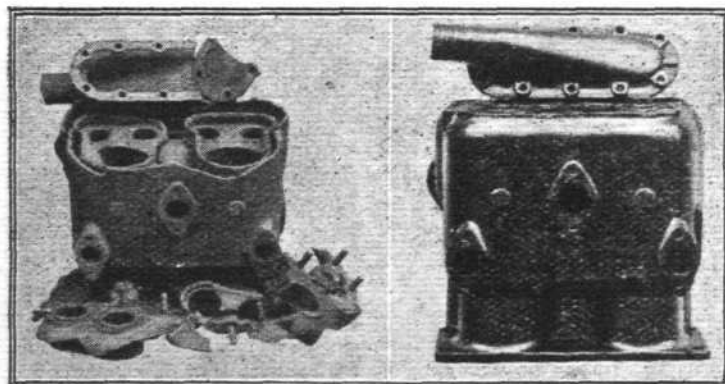
the manufacture of such articles. factories have to be equipped, and the Crittall Steel Furniture Co. have a splendid exhibit in a room near by. Steel storage bins, clothes cupboards, lockers, tables, chairs and stools. Not a small portion of their exhibit is that of furniture and utensils for factory cloak rooms. Washing sinks with a constant flow of water, and soap in ribbon form put up in steel receptacles so that no worker has to handle soap touched by another is a strong feature and one making for cleanliness and general economy.



An appropriately novel idea for a canopy is that of the Regent Carriage Co. on one of their aviation department luries. On this they have designed a centre section of an aeroplane wing, as seen in the photograph, as a covering above the driver.

Quite a novelty in its way is a nest of lockers and clothes hangers for the workers, where one key held by the forewoman or other head of department locks up and releases 20 compartments at one operation. Steel sheet and steel wire machinery guards are another feature of the Crittall Co., and altogether their exhibit is well worth a visit from those whose business calls for the use of such articles as have been here briefly touched upon.

Don't forget the Aircraft Workers' Sports at Stamford Bridge this Saturday. They are timed to commence at 3, and, given a good day of sunshine, should provide an afternoon's entertainment worth watching. There are plenty of covered stands for the timid, but who cares for a little rain? White tape will be broken at short intervals for hours on end, and Red Tape has not been sent a card of invitation. Let us give these hard workers a bumper afternoon and ourselves a pleasurable outing at one and the same time.



**BEFORE AND AFTER.**—In the above photographs is shown another example of a strikingly bad smash which Barimar Scientific Welding Experts have been able to make good in a marvellous way. On the left is depicted a pair of cylinders with combustion heads blown completely out, and smashed water jacket and water plate. On the right this heap of ruins is seen reconstituted, machined and cleaned, and made in every respect practically as good as new. Moral: Never scrap a metal part, however large or badly fractured, until it has had a fair show in the hands of the Barimar firm.

## COMPANY MATTERS.

### W. and T. Avery, Ltd.

THE report of W. and T. Avery, Ltd., for the year ended March 31st states that after making provision for depreciation, excess profits duty, &c., and including the amount brought forward from last year, the balance of revenue account is £53,740. From this amount has to be deducted interest on debentures, interim dividends, amounting in all to £13,661, leaving a disposable surplus of £40,079. The directors recommend on the ordinary shares a further dividend of 10 per cent., less tax, making, with the interim dividend, 12½ per cent. for the year, to place to reserve, which will then stand at £90,000, £13,000, and to carry forward £12,564.

The meeting of the company is called for July 17th at Birmingham, and an extraordinary meeting is also tabled for the same date and place, to enable the company to expand its powers under its memorandum of association so as to embrace mechanical engineers and a good many other important allied objects, of which an important one is "manufacturers of internal combustion and other engines, aircraft and munitions of war." Messrs. Avery's valued co-operation in the aircraft industry is a welcome feature of its development.

### NEW COMPANY REGISTERED.

K. W. P. ENGINEERING CO., LTD.—Capital £5,000, in £1 shares. Acquiring business carried on at 14, Sun Street, E.C., as the K. W. P. Engineering Co., mechanical and electrical engineers, manufacturers of aircraft, automobiles and vehicles, &c. Permanent directors: W. Knight and G. S. Warin.

### IMPORTS AND EXPORTS, 1916-1917.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see "FLIGHT" for January 25th, 1912; for 1912 and 1913, see "FLIGHT" for January 17th, 1914; for 1914, see "FLIGHT" for January 15th, 1915; for 1915, see "FLIGHT" for January 13th, 1916; and for 1916, see "FLIGHT" for January 11th, 1917.

	Imports.		Exports.		Re-Exportation.	
	1916.	1917.	1916.	1917.	1916.	1917.
January ...	1,509	10,842	6,399	67,033	Nil.	Nil.
February ...	6,444	9,479	30,693	26,512	—	6
March ...	3,388	11,158	17,872	58,517	7	—
April ...	3,333	21,141	22,608	21,151	3,783	—
May ...	1,986	6,877	26,165	59,713	300	—
June ...	4,986	2,670	50,287	14,647	—	—
	21,696	62,167	154,024	247,573	4,090	6

### Aeronautical Patents Published.

Applied for in 1916.

The numbers in brackets are those under which the Specifications will be printed and abridged, &c.

Published July 19th, 1917.

4,517. J. Robson. Aeroplanes, &c. (107,208.)

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages xxxviii, xxxix, and xl).

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